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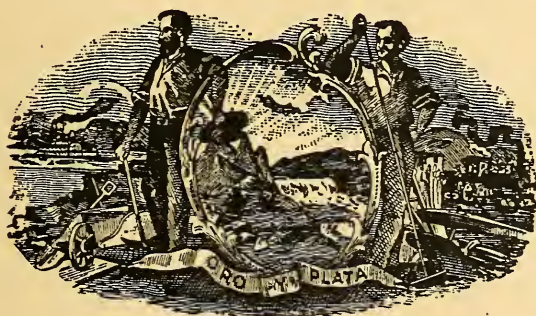
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STATE OF MONTANA DEPARTMENT OF PUBLIC INSTRUCTION

COURSES OF STUDY FOR ACCREDITED HIGH SCHOOLS



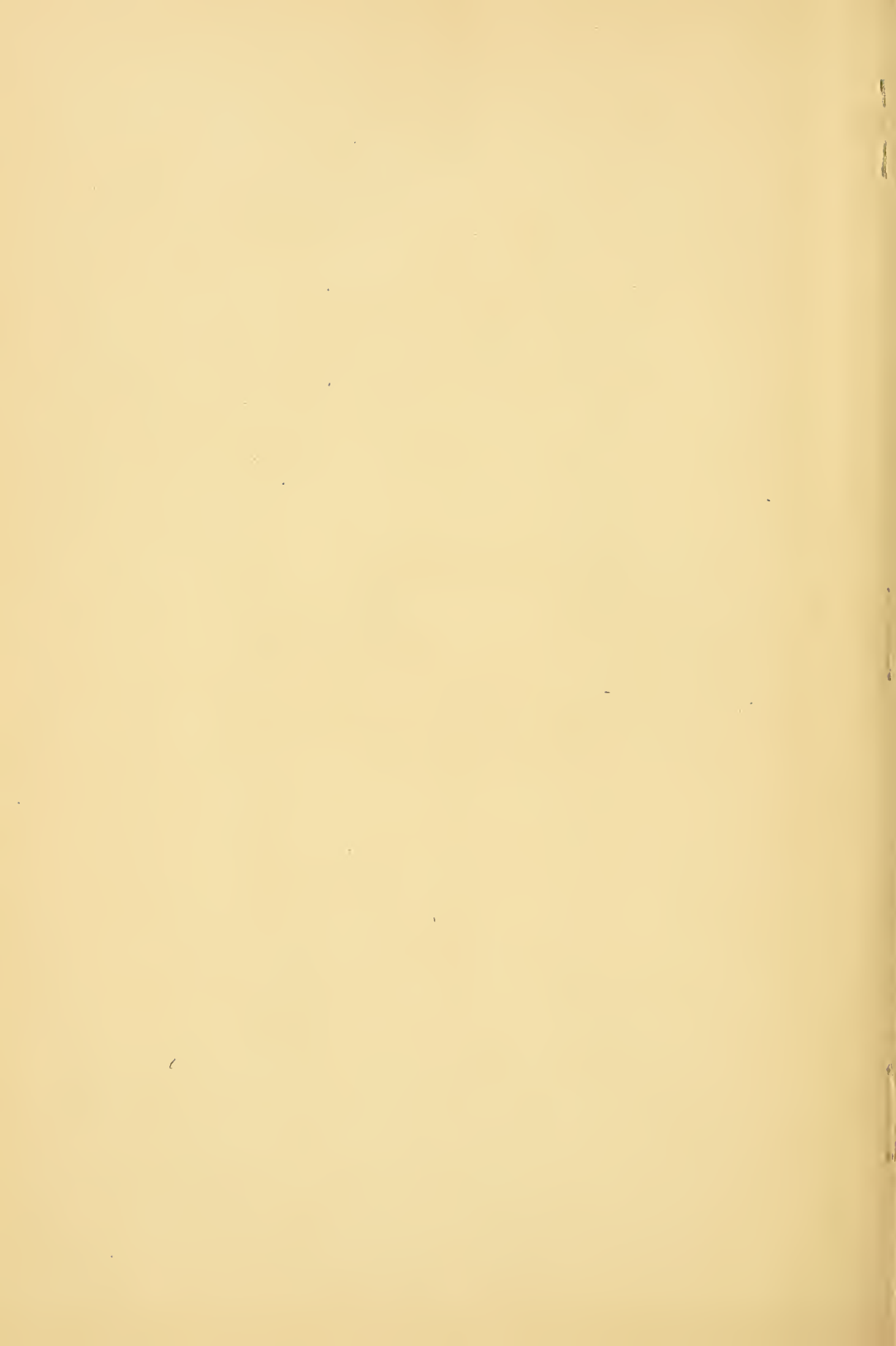
AUTHORIZED BY STATE BOARD OF EDUCATION

PREPARED BY
G. A. KETCHAM,
DEPUTY SUPERINTENDENT OF PUBLIC INSTRUCTION

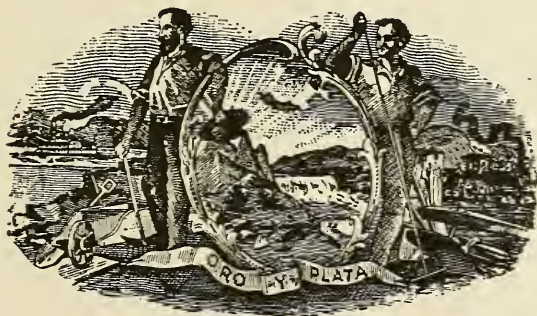
1912

"INDEPENDENT PUBLISHING COMPANY, HELENA, MONTANA."





STATE OF MONTANA
DEPARTMENT OF PUBLIC
INSTRUCTION
COURSES OF STUDY
FOR ACCREDITED HIGH SCHOOLS



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INTRODUCTORY NOTE.

The state course of study for elementary grades met with so much favor that the department was constantly in receipt of requests for a course of study for High Schools.

Finally the demand became so great that I was asked to prepare courses and submit them to the State Board of Education for approval. The courses of study presented herewith and the accompanying suggestions are not intended to be iron-clad, but the idea is to standardize the work of the High Schools without attempting to dictate. No manual can expect to meet the approval of all the widely varying ideas of superintendents, principals, and teachers. It is hoped that the manual will be of assistance to new high schools particularly and that it will help in standardizing the work of the older high schools. It may, at least, be regarded as indicating in a general way what will be considered as satisfactory work for Montana accredited high schools.

The preparation of the manual was undertaken at the urgent suggestion of State Superintendent W. E. Harmon, and would probably have been given up at several stages of its development had it not been for his encouragement. Acknowledgement is due to many teachers in Montana high schools for advice and suggestions. Much assistance was also derived from state manuals published in other states. The portion of the manual dealing with the Agricultural course was contributed entire by Principal L. R. Foote of the Beaverhead County High School. This part of the manual is likely to prove the most valuable of all.

Respectfully submitted,

G. A. KETCHAM,

Deputy Superintendent of Public Instruction.

SUGGESTED PROGRAM OF STUDIES FOR HIGH SCHOOLS OF MONTANA.

	Classical.	Scientific.	English.
Year I. Semester I.	Latin 5. English 5. Algebra 5. Greek History 5. Public Speaking 1.	English 5. Algebra 5. Greek History 5. Physical Geography 5. Public Speaking 1.	English 5. Algebra 5. Greek History 5. Physical Geography 5. Public Speaking 1.
Semester II.	Latin 5. English 5. Algebra 5. Roman History 5. Public Speaking 1.	English 5. Algebra 5. Roman History 5. Physical Geography 5. Public Speaking 1.	English 5. Algebra 5. Roman History 5. Physical Geography 5. Public Speaking 1.
Year II. Semester I.	Latin 5. English 5. Plane Geometry 5. Medieval History 5 or German 15. or French 15. Public Speaking 1.	English 5. Plane Geometry 5. German 15. or French 15. Public Speaking 1. Choose One: Medieval History 5. Biology 5. Botany 5. Zoology 5.	English 5. Plane Geometry 5. or Commercial Arithmetic 5. Public Speaking 1. Choose Two: German 15. or French 15. Medieval History 5. Biology 5. Botany 5. Zoology 5.
Semester II.	Latin 5. English 5. Plane Geometry 5. Modern History 5. or German 15. or French 15. Public Speaking 1.	English 5. Plane Geometry 5. German 15. or French 15. Public Speaking 1. Choose One: Medieval History 5. Biology 5. Botany 5. Zoology 5.	English 5. Plane Geometry 5. or Commercial Arithmetic 5. Public Speaking 1. Choose Two: German 15. or French 15. Modern History 5. Biology 5. Botany 5. Zoology 5.
Year III. Semester I.	Latin 5. English 5. Physics 5. or English 5. History 5. or Economics 5. German 15. or French 15. or German 15. or French 15. Public Speaking 1.	German 15. or French 15. English 5. Physics 5. Public Speaking 1. Choose One: Advanced Algebra 5. English History 5. Economics 5.	English 5. Physics 5. Advanced Algebra 5. or Bookkeeping 5. Public Speaking 1. Choose One: German 15. or French 15. German 15. or French 15. English History 5. Economics 5.

	Classical.	Scientific.	English.
Semester II.	Latin 5. English 5. Physics 5, or English. History 5, or Economics 5. German 15, or French 15, or German 115, or French 115. Public Speaking 1.	German 115, or French 115. English 5. Physics 5. Public Speaking 1. Choose One: Advanced Algebra 5. English History 5. Economics 5.	English 5. Physics 5. Advanced Algebra 5, or Bookkeeping 5. Public Speaking 1. Choose One: German 15, or French 15, or German 115, or French 115. English History 5. Economics 5.
Year IV. Semester I.	Latin 5. English 5. United States History and Civics 5. Public Speaking 1. Choose One: German 115, or or French 115. German 115, or French 115. Chemistry 5. Solid Geometry 5.	German 115, or or French 115. English 5. U. S. History and Civics 5. Public Speaking 1. Choose One: Chemistry 5. Solid Geometry 5.	English 5. Chemistry 5. U. S. History and Civics 5. Public Speaking 1. Choose One: German 115, or French 115. German 115, or French 115. Solid Geometry 5.
Semester II.	Latin 5. English 5. U. S. History and Civics 5. Public Speaking 1. Choose One: German 115, or French 115, or German 115, or French 115. Chemistry 5. Trigonometry 5.	German 115, or French 115. English 5. U. S. History and Civics 5. Public Speaking 1. Choose One: Chemistry 5. Trigonometry 5.	English 5. Chemistry 5. U. S. History and Civics 5. Public Speaking 1. Choose One: German 115, or French 115. German 115, or French 115. Solid Geometry 5.

SUGGESTED PROGRAM OF STUDIES FOR HIGH SCHOOLS OF MONTANA.

	Commercial.	Manual Training.	Domestic Science.
Year I. Semester I.	Algebra 5. English 5. Greek History 5. Physical Geography 5. Public Speaking 1.	Algebra 5. English 5. Bench Work 3. Freehand and Mechanical Drawing 2. Public Speaking 1. Physical Geography 5, or Agriculture 5.	Algebra 5. English 5. Sewing 3. Freehand Drawing 2. Physical Geography 5. Public Speaking 1.
Semester II.	Algebra 5. English 5. Roman History 5. Physical Geography 5. Public Speaking 1.	Algebra 5. English 5. Bench Work 3. Freehand and Mechanical Drawing 2. Public Speaking 1. Physical Geography 5, or Agriculture 5.	SAME.
Year II. Semester I.	Public Speaking 1. Commercial Arithmetic 5. Business English 5. German 5, or Medieval History 5. Choose One: Plane Geometry 5. Biology 5. Botany 5. Zoology 5.	Plane Geometry 5. English 5. Cabinet Work or Lathe 3. Mechanical Drawing 2. Public Speaking 1. Choose One: Medieval History 5. German 15, or French 15. Botany 5. Zoology 5. Biology 5.	English 5. German 15, or French 15. Freehand Drawing 2. Cooking 3. Greek History 5. Public Speaking 1.
Semester II.	Commercial Arithmetic 5. Business English 5. German 5, or Modern History 5. Choose One: Plane Geometry 5. Biology 5. Botany 5. Zoology 5. Public Speaking 1.	Plane Geometry 5. English 5. Cabinet Work or Lathe 3. Mechanical Drawing 2. Public Speaking 1. Choose One: Modern History 5. German 15, or French 15. Botany 5. Zoology 5. Biology 5.	English 5. German 15, or French 15. Freehand Drawing 2. Cooking 3. Roman History 5. Public Speaking 1.

	Commercial.	Manual Training.	Domestic Science.
Year III. Semester I.	English 5. German ii5, or Economics 5. Bookkeeping 5. Stenography and Typewriting 5. Public Speaking 1.	English 5. Mechanical Drawing 2. Iron working or Advanced Wood Working 3. Physics 5. Public Speaking 1. Choose One: Bookkeeping 5. Advanced Algebra 5. Economics 5. German i5, or French i5. German ii5, or French ii5.	English 5. German ii5, or French ii5. Applied Design 2. Domestic Art 3. English History 5, or Economics 5. Public Speaking 1.
Semester II.	English 5. German ii5, or Economics 5. Bookkeeping 5. Stenography and Typewriting 5. Public Speaking 1.	SAME.	SAME.
Year IV. Semester I.	Bookkeeping 5. Stenography and Typewriting 5. U. S. History and Civics 5. Commercial Geography 5. Public Speaking 1.	Public Speaking 1. English 5. U. S. History and Civics 5. Mechanical Drawing 2. Machine Shop, or Advanced Wood Working 3. Choose One: Chemistry 5. Solid Geometry 5. German ii5, or French ii5. German iii5, or French iii5.	English 5. German iii5, or French iii5. U. S. History and Civics 5, or Chemistry 5. Applied Design 2. Domestic Science 3. Public Speaking 1.
Semester II.	Same except Commercial Law in place of Commercial Geography.	Same except Trigonometry in place of Solid Geometry.	SAME.

One hundred and sixty-eight credits are required for graduation.
See note concerning music and drawing.

A credit is one recitation per week for a semester. Roman numerals indicate the year of course; Arabic numerals, number of recitations per week.

NOTES ON THE SUGGESTED PROGRAM OF STUDIES.

1. Biology, if properly taught should furnish a strong incentive toward right living in particularly just those ways in which the High School freshman is likely to go astray. Moreover in that year more students are reached than could be reached in any other.

Biology is not as good an introductory science as Physical Geography, but it is believed that the above condition more than offsets that fact.

2. Science teachers are divided into two pretty equal factions on the question of the precedence of Physics or Chemistry in the course. My own study and observation lead me to agree with those who believe that Physics should precede Chemistry.

3. German teachers are well agreed that the third year's work in German is worth very nearly as much as the other two combined. Language teachers in general hold that three years' work in one language is to be preferred to four years in two.

4. The course as outlined makes no provision for French. Its place is decidedly unsettled in my own mind unless it is to stand simply as an alternative to German. It should, of course, be offered in the larger High Schools for the benefit of students who wish to make some particular use of it.

5. Probably the most unusual feature of the course is the year of Advanced Algebra in place of the half year commonly taught. The tendency among the high schools is, however, in this direction, a number of the strongest High Schools in the United States, having made the change several years ago. It should be elective and urged only upon students who expect to make special use of their mathematics. Several years ago several of the chief technical schools of the United States and Engineering Departments of various universities ceased giving credit for high school algebra on the ground that students were not sufficiently prepared. I believe mathematics teachers are practically a unit in approving the year's course.

6. Perhaps it would be well to substitute a course in advance Arithmetic in place of the course in Trigonometry or at least to offer it as a substitute.

7. Schools desiring to add music or drawing to the first two years of the Classical, Scientific, English and Commercial courses should provide for two recitations per week and the

time be taken from some other subject or subjects in the course.

8. The State Board of Indiana, following the recommendation of the N. E. A., adopted in the report of the Committee on Articulation of High School and College, has recently adopted a course for certified High Schools making it possible for a student to graduate with no mathematics, whatever. Perhaps the time has not yet arrived for such action in Montana.

9. The course in Agriculture has been prepared under the direction of Prin. L. R. Foote of Dillon. Mr. Foote has been working on the problem longer and more successfully than any one else in the state. His course has been criticised because it is too full, attempts too much, or as Prof. Cooley says, "Takes itself too seriously."

I wish to make two suggestions as to this criticism, the only one, I believe likely to be offered. First—The course in Agriculture in the High School can be defended only upon the ground of its social value in turning young people away from the shop and office and back to the farm—or upon the ground of its practical value to those who follow Agriculture as a profession. In order to accomplish either of these purposes the work offered must be fully equal both in quality and quantity to that of any other subject in the course.

Second—The course has been worked out in great detail because of the present general confusion existing in the minds of teachers and principals with reference to its proper content and method. It is intended to be fully suggestive for all Montana conditions, each school being left to select the course best fitted to its environment and emphasize those phases of these courses which are of especial local significance.

10. I believe the course in Agriculture will be the most valuable part of the manual. The ordinary High School subjects have been pretty thoroughly worked out and are in general in charge of teachers who are themselves critical students of their work with well grounded ideas both as to content and as to method. For such teachers the outlines of work herewith given are without significance while one complete one would simply arouse debate, unless laid down as abiter dicta, unquestionably an unwise proceeding. The best thing to do, therefore, seems to be to furnish a few generally accepted

suggestions as to method and content. This has the advantage of furnishing an incentive to the weak teacher while leaving the strong teacher free to pursue his own aims and methods and to modify the content to suit his purposes.

11. Economics as an independent subject in the High School Course is beginning to recover from the period of depression following the report of the Committee of Ten. The conditions which produced that report,—lack of the proper texts, adequately prepared teachers and library recourses,—have now been removed in our better schools. An attempt has been meanwhile made through the course in History to bridge the well-recognized gap created by the omission. The remedy has not been sufficient. The predominating and constantly increasing economic aspect of society's chief problems make it extremely desirable that High School students have their attention very definitely directed to them and be furnished with sound principles for study and criticism.

ENGLISH.

The Paramount Subject.

It is generally admitted that of all subjects taught in the High School the study of the mother tongue is the most important. Whether one is to lead a life of ease or of practical every day work, an effective knowledge of his own language and literature is equally desirable.

Three Fold Purpose.

The High School course in English has three purposes: First, to develop the ability to write and speak good English; second, to develop the capacity and desire to read and appreciate good English; third, to give the student a knowledge of the most important facts and tendencies in the History of English Literature. The first is the most important and in practice almost inseparable from the second, while the third naturally accompanies both.

Suggestions.

For the accomplishment of the first purpose it is necessary that students be given practice in both written and oral composition throughout the High School course. Subjects for themes should be taken, especially in earlier years, from the pupil's own experience; or, at least from topics upon which he may easily acquire first hand information. Avoid bookish or pedantic topics.

The second purpose of the English course is best reached by requiring students to read good English. Great care must be exercised to choose reading that is suited to the age, ability, and taste of the majority of the class. Poor judgment on the part of the teacher in the selection of material may alienate the interest of a whole class in the entire field of good literature. For this reason the High Schools welcome the wider opportunity for choice now offered by the "Requirements for College Entrance in English." The reading, moreover, must be for the sake of pleasure, not for the sake of analysis. Teachers must not with their classes analyze details so closely as to obscure the beauty of the whole. This has been one of the chief faults in the teaching of High School English.

During the last two years a text-book in the History of English Literature should be used and the classics read should correlate with the work in the text. Thus the History illumi-

nates the classics and the classics lead reality to the History. The emphasis should be placed upon the growth and development of the great movements of English Literature not upon the details of individual lives.

American Literature.

American Literature must not be ignored. The teacher may require books for outside reading and report to be chosen from this field and may devote some time to study of its history by means of class room talks by the teacher and reports on reference reading by the students. It is not, however, deemed desirable to offer a separate course in the subject.

Responsibility for Results.

The responsibility for the results of the High School course in English can not be said to rest solely with the English teachers. The same standards that are applied by the English teachers to an English theme or recitation should be applied by all teachers, of whatever department, to the work of their classes. There is no place in the High School for the teacher who uses slovenly English or who accepts its use by his students. Many High Schools have a splendid opportunity for improvement in the line of this suggestion.

Criticism of Themes.

All criticisms of themes, whether written or oral, should be of the constructive type. The purpose should be to discover and encourage whatever is good, characteristic and individual in the pupil's work and so to direct it as to bring it to its fullest and best expression. Criticism that merely points out defects is disheartening to pupils, particularly in the first years of High School.

Personal Conferences.

In no other subject is personal conference with the pupils so invaluable. It furnishes opportunity for the development of individuality in the pupil which can be found in no other way. At this time, too, the teacher may follow up his criticisms, see that they are understood and insist upon their being put into use. It is the duty of the Principals, Superintendents, and Boards to arrange the work of English teachers in consideration of the large proportion of it which must be done outside of class room hours.

Arrangement of Work.

The introduction to "Foundation English" by MacDonald, Benjamin H. Sanborn and Company, has some excellent suggestions to teachers as to the arrangement of work.

Reading Aloud.

While the English course in the High School cannot undertake to do the work of a course in Public Speaking, students should, nevertheless, be frequently called upon to read portions of the assigned lessons aloud, and every effort should be made, within the time available, to produce fluent, intelligent readers.

Ethical Aims.

English offers to the teacher greater opportunity than any other subject to develop the ethical instincts of boys and girls and to impress the great lessons of morality. The teacher who fails to make the most of this phase of her work fails altogether.

Outside Reading.

Most boys and girls of High School age do more or less reading in addition to that required by their regular High School courses. Here is an educational force which should be guided and utilized by the school. Accordingly it is advised that fixed requirements be made for each year both as to the amount and kind of reading to be done. For the first two years 500 pages each semester and for the last 750 pages, each semester are perhaps reasonable and wise requirements. It should likewise be required that at least one half the reading be non-fiction. The appended lists with few exceptions are those adopted for the High Schools of Seattle:

Alcott, Louise May	Little Women.
Alcott, Louise May	Old Fashioned Girl.
Alcott, Louise May	Spinning Wheel Stories.
Aldrich, Thomas Bailey	Marjorie Daw.
Allen, James Lane	Aftermath.
Allen, James Lane	Kentucky Cardinal.
Allen, James Lane	The Choir Invisible.
Allen, James Lane	The Flute and the Violin.
Andrews, Mary Shipman	Bob and the Guides.
Andrews, Mary Shipman	The Perfect Tribute.
Aquillon.....	Days of Bruce.
.....	Arabian Nights.
Barrie, James Matthew	A Window in Thrums.
Barrie, James Matthew	Sentimental Tommy.

Barrie, James Matthew	The Little Minister.
Brown, Dr. John	Marjorie Flemming.
Brown, Dr. John	Rab and His Friends.
Blackmore, Richard	Lorna Doone.
Bulwer Lytton	Harold.
Bulwer Lytton	Last Days of Pompeii.
Cable, George Washington	Creole Days.
Cable, George Washington	Dr. Sevier.
Chambers, Robert Williams	Cardigan.
Churchill, Winston	Richard Carvel.
Cooper, James Fennimore	The Deerslayer.
Cooper, James Fennimore	Afoot and Ashore.
Cooper, James Fennimore	The Pathfinder.
Cooper, James Fennimore	The Pilot.
Cooper, James Fennimore	The Pioneers.
Cooper, James Fennimore	The Prairie.
Cooper, James Fennimore	The Spy.
Cooper, James Fennimore	The Two Admirals.
Defoe, Daniel	Robinson Crusoe.
De Morgan, William F.	Alice for Short.
De Morgan, William F.	Joseph Vance.
Dickens, Charles	Christmas Stories.
Dickens, Charles	Dombey and Son.
Dickens, Charles	Great Expectations.
Dickens, Charles	Nicholas Nickleby.
Dickens, Charles	Old Curiosity Shop.
Dickens, Charles	Oliver Twist.
Dickens, Charles	The Christmas Carol.
Eggleston, Edward	The Hoosier Schoolmaster.
Eliot, George	Mill on the Floss.
Eliot, George	Scenes from a Clerical Life.
Ewing, Juliana Horatia	Jan of the Windmill.
Ewing, Juliana Horatia	Six to Sixteen.
Fox, John Jr.	Little Shepherd of Kingdom Come.
Fraser, Mrs. Hugh	In the Fear of the Lord.
Frederick, Herold	In the Valley.
Gaskell, Elizabeth Cleghorn	Cranford.
Gordon, Charles William	The Sky Pilot.
Hale, Edward Everett	Back to Back.
Hale, Edward Everett	Stories of War.
	Stories of the Sea.
	The Man Without a Country.
Hart, Bret	The Luck of Roaring Camp.
Hawthorne, Nathaniel	Rappaccini's Daughter.
Hawthorne, Nathaniel	Tanglewood Tales.
Hawthorne, Nathaniel	The Snow Image.
Hawthorne, Nathaniel	The Wonder Book.
Hawthorne, Nathaniel	Twice Told Tales.
Howells, William Dean	A Traveler from Altruria.
Howells, William Dean	The Lady of the Wroustock.

Hughes, Thomas	Tom Brown at Oxford.
.....	Tom Brown's School Days.
Hugo, Victor Marie	Les Miserables.
Jackson, Helen Hunt	Ramona.
Jewett, Sara Orne	A Country Doctor.
Jewett, Sara Orne	Betty Leicester.
Jewett, Sara Orne	Tales of New England.
Kingsley, Charles	Hereward the Wake.
Kingsley, Charles	Westward Ho!
Kipling, Rudyard	Captains Courageous.
Kipling, Rudyard	Indian Tales.
Kipling, Rudyard	Kim.
Kipling, Rudyard	Puck of Pook's Hill.
Kipling, Rudyard	The Jungle Books.
Lamb, Charles and Mary	Adventures of Ulysses.
Lamb, Charles and Mary	Tales from Shakespeare.
London, Jack	The Call of the Wild.
Malory, sir Thomas	Morte d'Arthur.
Olivant, Alfred	Bob, Son of Battle.
Ouide (Louise de la Ramee)	The Dog of Flanders.
Phelps, Elizabeth Stuart	The Madonna of the Tubs.
.....	Kenilworth.
Scott, Sir Walter	Old Mortality.
Scott, Sir Walter	Rob Roy.
Scott, Sir Walter	Tales of a Grandfather.
Scott, Sir Walter	The Abbott.
Scott, Sir Walter	The Heart of Midlothian.
Scott, Sir Walter	The Talisman.
Seton, Ernest Thompson	Wahb.
Seton, Ernest Thompson	Wild Animals I have known.
Smith, Francis Hopkinson	Gondola Days.
Stevenson, Robert Louis	David Balfour.
Stevenson, Robert Louis	Kidnapped.
Stevenson, Robert Louis	Black Arrow.
Stevenson, Robert Louis	The Bottle Imp.
Stevenson, Robert Louis	The Master of Ballentrae.
Stevenson, Robert Louis	Treasure Island.
Stockton, Frank Richard	Rudder Grange.
Stockton, Frank Richard	Selected Short Stories.
Stowe, Harriet Beecher	Uncle Tom's Cabin.
Twain, Mark (Samuel L. Clemens)	Innocents Abroad.
Twain, Mark (Samuel L. Clemens)	Life on the Mississippi.
Twain, Mark (Samuel L. Clemens)	Tom Sawyer.
Van Dyke, Dr. Henry	The Blue Flower.
Van Dyke, Dr. Henry	The Other Wise Man.
Wallace, Lew	Ben Hur.
Warner, Charles Dudley	Being a Boy.
Watson, John (Ian Maclaren)	Days of Auld Lang Syne.
Watson, John (Ian Maclaren)	The Bonny Briar Bush.

White, Stewart Edward	The Blazed Trail.
White, Stewart Edward	The Forest.
White, A.	The Real Issue.
Wiggin, Kate Douglas	Diary of a Goose Girl.
Wiggin, Kate Douglas	The Bird's Christmas Carol.
Wiggin, Kate Douglas	The Story of Patsy.
Wilkins, Mary E.	Selected Short Stories.
Winthrop, Theodore	John Brent.

II. NON-FICTION.

Abbott, Charles C.	A Naturalist's Rambles About Home.
Addison, Joseph	Meserole's Selections from the Spec- tator.
Ainsworth, William Harrison	Old Saint Paul's.
Ainsworth, William Harrison	Tower of London.
Alcott, Louisa May	Hospital Sketches.
Lord Avebury, John Lubbock	Ants, Bees and Wasps.
Bailey, Mrs. Florence Augusta	A-birding on a Bronco.
Bates, Henry W.	Naturalists on the River Amazon.
Blanchan, Mrs. Nellie	Bird Neighbors
Blanchan, Mrs. Nellie	Birds That Hunt and Are Hunted.
Drummond, Henry	The Ascent of Man.
Bolton, Sarah Knowles	Historic Boys.
Bolton, Sarah Knowles	Historic Girls.
Brooks, Norah	First Across the Continent.
Buckley, Arabella B.	Winners in Life's Race.
Bunyan, John	Pilgrim's Progress.
Burroughs, John	Birds and Bees.
Burroughs, John	Birds and Poets.
Burroughs, John	Field Notes.
Burroughs, John	Locusts and Wild Honey.
Burroughs, John	Pepacton.
Burroughs, John	Signs and Seasons.
Burroughs, John	Wake Robin.
Carlyle, Thomas	Heroes and Hero Worship.
Chisholm, Edwin	Old Testament Stories.
Crawford, Francis M.	The Little City of Hope .
Dana, Richard Henry	Two Years Before the Mast.
Darwin, Charles	Earthworms.
Darwin, Charles	Insectivorous Plants.
Darwin, Charles	Naturalist's Voyage Round the World.
DeQuincy, Thomas	Jean of Arc.
DeQuincy, Thomas	The English Mail Coach.
Dickens, Charles	A Child's History of England.
Duncan, Norman	Dr. Luke of Labrador.
Dunn, Martha Baker	Cicero in Maine.
.....	Escapes of the Civil War.
.....	Famous Adventures and Prisons.
Fields, James Thomas	Yesterdays with Authors.
Foster, John	Life of Dickens.

Franklin, Benjamin	Autobiography.
Froude, James Anthony	Life of Caesar.
Goldsmith, Oliver	A Citizen of the Civil War.
Grant, Ulysses Simpson	Memoirs.
Hale, Edward Everett	Memories of a Century.
Hay, John	Castilian Days.
Holmes, Oliver Wendell	Autocrat of the Breakfast Table.
Holmes, Oliver Wendell	Over the Teacups.
Huxley, Thomas H.	American Addresses.
Huxley, Thomas H.	Lay Sermons.
Huxley, Thomas H.	Critiques and Addresses.
Huxley, Thomas H.	Man's Place in Nature.
Huxley, Thomas H.	Science and Culture.
Irving, Washington	Alhambra.
Irving, Washington	Astoria.
Irving, Washington	A Tour on the Prairies.
Irving, Washington	Captain Bonneville.
Irving, Washington	Conquest of Granada.
Irving, Washington	Life of Columbus.
Jenks, Tudor	In the Days of Shakespeare.
Job, Herbert Keightley	Among the Waterfowl.
Job, Herbert Keightley	Wild Wings.
Jordan, David Starr	Footnotes to Evolution.
Jordan, David Starr	Science Sketches.
Keller, Helen	The Story of My Life.
Keller, Helen	The World I Live in.
Kingsley, Charles	Greek Heroes.
Lamb, Charles	Dissertation on Roast Pig.
Lamb, Charles	Essays of Elia.
Lamb, Charles	Praise of a Chimney Sweep.
Lanier, Sidney	Boy's Froissart.
Lanier, Sidney	Boy's King Arthur.
Lord Aveburg, John Lubbock	Ants, Bees and Wasps.
Lowell, James Russell	Fireside Travels.
Lowell, James Russell	My Study Windows.
Macaulay, Thomas Babington	Essays on Clife, Hastings, Bunya, Pitt.
Materlinck, Maurice	Life of the Bee.
Miller, Mrs. Harriet	A Bird Lover in the West.
Miller, Mrs. Harriet	Birdways.
Miller, Mrs. Harriet	In Nesting Time.
Miller, Mrs. Harriet	Little Brothers of the Air.
Miller, Mrs. Harriet	True Stories from My Note Books.
Miller, Mrs. Harriet	Upon the Tree Tops.
Morris, William	Apology in Earthly Paradise.
Motley, John Lothrop	Rise of the Dutch Republic.
Nicoley, John George	Boy's Life of Lincoln.
Palmer, George Herbert	Translation of Odyssey.
Parkman, Francis	Montcalm and Wolf.
Parkman, Francis	The Conspiracy of Pontiac.

Parkman, Francis	The Discovery of the Great West.
Parkman, Francis	The Oregon Trail.
Plutarch	Lives.
Prescott, William Hinkling	Conquest of Mexico.
Prescott, William Hinkling	Conquest of Peru.
Riis, Jacob	The Making of an American.
Rolfe, William James	Boyhood of Shakespeare.
Roosevelt, Theodore	Hero Stories from American History.
Roosevelt, Theodore	The Winning of the West.
Ruskin, John	King of the Golden River.
Ruskin, John	Letters to C. E. Norton.
Schurz, Carl	Life of Henry Clay.
Schurz, Carl	Reminiscences.
Scudder, Samuel Hubbard	The Life of a Butterfly.
Southey, Robert	Life of Nelson.
Stevenson, Robert Louis	An Inland Voyage.
Stevenson, Robert Louis	Letters.
Stevenson, Robert Louis	Travels with a Donkey.
Stevenson, Robert Louis	Virginibus Puerisque.
Stoddard	Lectures.
Thackeray, William Makepeace	Roundabout Papers.
Thackeray, William Makepeace	The Four Georges.
Thompson, J. Arthur	Science and Life.
Tyball, John	Fragments of Science.
VanDyke, Dr. Henry J.	Days Off.
VanDyke, Dr. Henry J.	Fisherman's Luck.
Warner, Charles Dudley	In the Wilderness.
Washington, Booker T.	Up from Slavery.
Weed, Clarence Moores	Seed Travelers.
Wister, Owen	Seven Ages of Washington.
Wright, Mrs. Mabel Osgood.	Birdcraft.

III. POETRY.

Selections will be made from the works of the following poets. Students should be encouraged to read at least twenty-five pages of poetry each semester. Credit as non-fiction.

Arnold, Matthew.	Kingsley, Charles.
Aytoun, William E.	Lowell, James Russel.
Browning, Robert.	Mabie, Hamilton W.
Bryant, William Cullen.	Macaulay, Thomas B.
Burns, Robert.	Palgrave.
Byron, Lord.	Scott, Sir Walter.
Doyle, Arthur Conan.	Shakespeare, William.
Gayley, Chas. Mills.	Southey, Robert.
Halleck, Fritz-Greene.	Stevenson, R. L.
Hunt, Leigh.	Whittier, John Greenleaf.
Kipling, Rudyard.	Wolfe, Charles.

THIRD YEAR—I. FICTION LIST.

Austen, Jane	Pride and Prejudice.
Austen, Jane	Sense and Sensibility.
Black, William	Juith Shakespeare.
Bulwer-Lytton, Edward G.	Last of the Barons.
Cervantes, Miguel	Don Quixote.
Cody, Sherwin	The World's Greatest Short Stories.
Cox, George Wm.	Popular Romances of the M'ddle Ages.
Curtis, George Wm.	Sidney.
Dickens, Charles	Pickwick Papers.
Dickens, Charles	Our Mutual Friend.
Dickens, Charles	Hard Times.
Eliot, George	Adam Bede.
Eliot, George	Felix Holt.
Hope, Anthony	Prisoner of Zenda.
Mandeville, Sir John	Voyages and Travels.
More, Robert	Jessey Bride.
More, Sir Thomas	Utopia.
Matthews, Brander	A Collection of Short Stories.
Parker, Gilbert	In the Seats of the Mighty.
Reade, Charles	Cloister and Hearth.
Scott, Walter	Waverly.
Scott, Walter	The Monastery.
Scott, Walter	The Abbot.
Scott, Walter	Guy Mannering.
Sidney, Sir Phillip	Arcadia.
Stevenson, Robert Louis	Will o' the Mill.
Stevenson, Robert Louis	The Merry Men.
Stevenson, Robert Louis	Kidnapped.
Stevenson, Robert Louis	Dr. Jeckly and Mr. Hyde.
Swift, Jonathan	Tale of a Tub.
Thackeray, Wm. Makepeace	Vanity Fair.
Thackeray, Wm. Makepeace	Henry Esmond.
Thackeray, Wm. Makepeace	The Newcomers.
Walpole, Horace	The Castle of Otranto.

II. NON-FICTION LIST.

Anderson, Hans Christian	The Story of My Life.
Arnold, Matthew	Essays.
Arnold, Matthew	Culture and Anarchy.
Arnold, Matthew	Thomas Gray.
Bacon, Francis	Essays.
Bancroft, George	History of the United States.
Boswell, James	Life of Dr. Johnson.
Brandes, George	Select Chapters from "Wm. Shakespeare."
Browning, Robt. and Mrs.	Letters.
Bunyan, John	Reflections o the French Revolution.
Carlyle, Thomas	History of the French Revolution.

Thackeray, Wm. Makepeace	English Humorists of the 18th Century.
Ticknor, George	History of Spanish Literature.
Walton, Izaak	The Complete Angler.
Ward, Thomas Humphrey	English Poets.
Wordsworth, Wm.	Essays.

III. POETS FROM WHOSE WORKS SELECTIONS WILL BE MADE.

Arnold, Matthew.	Macaulay, Thomas Babington.
Beowulf.	Macpherson, James.
Blake, William.	Milton, John.
Browning, Robert.	Marlowe, Christopher.
Browning, Elizabeth Barrett.	Moore, Thomas.
Burns, Robert.	Morris, William.
Byron, George Gordon.	Newman, John Henry.
Campbell, Thomas.	Phillips, Stephen.
Carew, Thomas.	Pope, Alexander.
Chaucer, Geoffrey.	Proctor, Bryan Walker.
Coleridge, Samuel Taylor.	Rossetti, Dante Gabriel.
Collins, William.	Scott, Walter.
Cowper, William.	Shakespeare, William.
Dryden, John.	Shelley, Percy Bysshe.
Dunbar, William.	Southey, Robert.
Goldsmith, Oliver.	Spenser, Edmund.
Gray, Thomas.	Stevenson, Robert Louis.
Herrick, Robert.	Suckling, Sir John.
Hood, Thomas.	Tennyson, Alfred.
Keats, John.	Swinburne, Algernon.
Kingsley, Charles.	Thomas, James.
Kipling, Rudyard.	Watson, William.
Landow, Walter Savage.	Wordsworth, William.
Lovelace, Richard.	

FOURTH YEAR—I. FICTION.

Allen, James L.	The Choir Invisible.
Allen, James L.	Aftermath.
Allen, James L.	Kentucky Cardinal.
Cable, George W.	Bonaventura.
Cable, George W.	The Grandissimos.
Cable, George W.	Georgie's Island.
Churchill, Winston	The Crisis.
Cody, Sherwin	The World's Greatest Short Stories.
Curtis, George Wm.	Prue and I.
Foote, Mary Hallem	Couer d'Alene.
Harte, Francis Bret	Luck of Roaring Camp.
Hawthorne, Nathaniel	Marble Faun.
Hawthorne, Nathaniel	The Scarlet Letter.
Hawthorne, Nathaniel	Blithedale Romance.
Hope, Anthony	Prisoner of Zenda.
Howells, William Dean	Their Wedding Journey.
Howells, William Dean	The Rise of Silas Lapham.

Howells, William Dean	The Traveler from Altruria.
James, Henry	The Bostonians.
Jewett, Sarah Orne	Tales of New England.
Longfellow, Henry W.	Kavanaugh.
Matthews, Brander	Collection of Short Stories.
Meredith, George	Diana of the Crossways.
Page, Thomas Nelson	Red Rock.
Smith, Francis Hopkinson	Col. Carter of Cartersville.
Smith, Francis Hopkinson	Tom Gregor.
Smith, Francis Hopkinson	Wood Fire.
Stowe, Harriet Beecher	The Minister's Wooing.
Twain, Mark	Yankee King Arthur's Court.
Wister, Owen	The Virginian.

II. NON-FICTION.

American Men of Letters Series.

American Statesmen Series.

Beecher, Henry Ward	Patriotic Addresses.
Burke, Edmund	Speech on American Taxation.
Burke, Edmund	Letters to a Noble Lord.
Burke, Edmund	Speech on Trial of Warren Hastings.
Burke, Edmund	Speech on Nabon of Scot's Debts.
Burroughs, John	Essays.
Burroughs, John	A Bunch of Herbs.
Burroughs, John	Hard Fare.
Cicero, Marcus Tullius	On Friendship.
Curtis, George William	Addresses on Civil Service Reform.
Curtis, George William	Our Best Society.
Emerson, Ralph Waldo	Essays.
Fiske, John	American Ideals.
Fiske, John	The Critical Period.
Fiske, John	The Destiny of Man.
Hamilton, Madison and Jay	The Federalist.
Holmes, Oliver Wendell	Poet at the Breakfast Table.
Irving, Washington	Knickerbocker's History of New York.
Irving, Washington	Life of Goldsmith.
Irving, Washington	Mahomet and his Successors.
Jefferson, Thomas	Autobiography.
Jefferson, Thomas	Notes on Virginia.
Larcom, Lucy	A New England Girlhood.
Lincoln, Abraham	Debates with Douglas.
Lincoln, Abraham	Inaugural Addresses.
Lincoln, Abraham	Emancipation Proclamation.
Lowell, James Russell	Among My Books.
Lowell, James Russell	Literary Essays.
Lowell, James Russell	Democracy and Other Addresses.
Mabie, Hamilton Wright	Short Studies in Literature.
Mabie, Hamilton Wright	Essays.
Mabie, Hamilton Wright	My Study Fire.
Mabie, Hamilton Wright	Under the Trees and Elsewhere.

Mitchell, Donald G.	Reveries of a Bachelor.
Motley, John Lathrop	United Netnerlands.
Parkman, Francis	Old Regime in Canada.
Perry, Bliss	Study of Prose Fiction.
Prescott, William Hickling	Ferdinand and Isabella.
Prescott, William Hickling	Phillip II.
Replier, Agnes	Essay on Adleness.
Stedman, Edmund Clarence	American Anthology.
Stedman, Edmund Clarence	American Poets.
Sumner, Charles	The True Grandeur of Nations.
Thoreau, Henry David	Walden.
Thoreau, Henry David	Week on the Concord and Merrimac Rivers.
Ticknor, George	History of Spanish Literature.
VanDyke, Henry	Essays.
Warner, Charles Dudley	My Summer in a Garden.
Washington, George	Farewell Address.
Washington, George	Correspondence.
Webster, Daniel	Speech on the White Murder Trial.
Wendell, Barrett	Literary History of America.
Winter, William	Grey Days and Cold.
Woolman, John	Journal.

III. POETS FROM WHOSE WORKS SELECTIONS WILL BE MADE.

Bryant, William Cullen.	Markham, Edwin.
Dunbar, Paul Lawrence.	Poe, Edgar Allen.
Emerson, Ralph Waldo.	Lead, Thomas Buchanan.
Field, Eugene.	Riley, James Whitcomb.
Freneau, Philip.	Saxe, John Godfrey.
Halleck, Fitzgreene.	Sill, Edward Rowland.
	Stedman, Edmund Clarence.
Holmes, Oliver Wendell.	Taylor, Bayard.
Longfellow, Henry W.	Whitman, Walt.
Lowell, James Russell.	Whittier, John Greenleaf.

OUTLINE OF COURSE.

First Year—First Semester.

1. Composition and Rhetoric. Two hours per week during the first two years.

The chief aim is to secure freedom and spontaneity of expression. If those things are gained, good writing may be almost certainly secured, but if they are repressed and discouraged, good writing becomes impossible. Narration and description should be chiefly employed. Much of the work should be done in class, well prepared oral compositions alternating with written. Unless the teacher is particularly skilled and resourceful, a text-book in composition should be employed as a guide.

2. Literature. Three hours per week.

Selections from lists furnished by the committee on "Uniform College Entrance Requirements in English."

This list may be secured in printed form from any of the publishers of English classics for schools.

First Year—Second Semester.

1. Composition and Rhetoric. Two hours per week.

Sentence structure emphasized.

Elementary study of paragraph.

Letter Writing. Grammar.

2. Literature. Three hours per week.

Selections as above.

The following arrangement based on the requirements for 1912-15 is suggested as one of the many desirable ones.

ENGLISH I.

First Semester—

1. Silas Marner.

2. Old Testament Narratives.

Outside Readings—

(Alternating to allowing the pupil to choose from the approved lists.)

1. Robinson Crusoe.

2. Vicar of Wakefield.

3. Treasure Island.

4. Lays of Ancient Rome.

Second Semester—

1. Lady of the Lake.

2. Merchant of Venice.

Outside Readings—

1. Sohrab and Rustum.
2. Courtship of Miles Standish.
3. Snow Bound.
4. Own selections from approved list.

ENGLISH II.

First Semester—

1. Idylls of the King.
2. Inland voyage or Travels with a Donkey.

Outside Readings—

1. Pilgrim's Progress.
2. Franklin's Autobiography.
3. Midsummer Night's Dream.
4. Own selections from approved list.

Second Semester—

1. Twelfth Night.
2. Tale of Two Cities.
3. Julius Caesar.

Outside Reading—

1. Quentin Durward.
2. Ivanhoe.
3. Own selection from approved list.

ENGLISH III.

First Semester—

1. Life of Johnson.
2. Henry V.
3. Deserted Village.
4. Gray's Elegy.
5. Hume of the Ancient Mariner.

Outside Reading—

1. De Coverly Papers.
2. Henry Esmond or David Copperfield.

Second Semester—

1. Essay on Burns.
2. Selections from Burns.
3. Intimations of Immortality.
4. Prisoner of Chillon.
5. Selections from Browning.
6. Vision of Sir Launfal.
7. Poe's Raven.

Outside Reading—

1. Crauford or House of Seven Gables.
2. The Princess.
3. As You Like It.

ENGLISH IV.—

First Semester—

1. Chaucer's Prologue.
 2. Hamlet.
 3. Macbeth.
- Milton's Minor Poems.

Outside Reading—

1. First Bunker Hill Oration.
2. Farewell Address.
3. Carlyle's, The Hero as Poet.
" The Hero as Man of Letters.
" The Hero as King.

Second Semester—

1. Alexander's Feast.
2. Burke's Conciliation.
3. Sesame and Lies.

Outside Reading—

(Choose two from this group.)

- (a) Macaulay's Essay on Clive and Hastings.
- (b) Thackeray's English Humorists.
- (c) Selections from Lincoln. (See College Requirements.)
- (d) Oregon Trail.

Second Year—First Semester.

1. Composition and Rhetoric. Two hours per week.

Clearness of thinking should be the aim. Some argumentations should be introduced and English teachers should remember that their pupils are studying the art of logical statements in their Geometry at this very time. Paragraphing should be carefully studied including transitions from paragraph to paragraph. Unity, coherence, emphasis should receive attention and connectives should be studied.

2. Literature. Three hours per week.

Selections as above.

Second Year—Second Semester.

1. Composition and Rhetoric. Two hours per week. The composition as a whole. Introductions. Conclusions. Sentence structure, long, short, loose, periodic, balanced, etc.

2. Literature. Three hours per week.

Selections as above.

Third Year—First Semester.

1. Composition and Rhetoric.

During the last two years this work should occupy about one-fifth of the recitation time. It should now be possible to

leave matters of grammatical accuracy and the ordinary details of rhetorical form and center the work upon the larger problems of the selection and organization of matter and the choice of literary form of expression. Diction should now be emphasized, pupils being trained to scrutinize their words carefully and to choose them critically. Anecdotes and stories with simple plots will prove desirable exercise.

2. Literature.

Selection as above.

2. a. Some of the most successful teachers of English introduce at this time a text-book in English Literature, covering the subject during this third year down to the Restoration. If this is done the reading of the class should be so chosen as to furnish illustration to the text.

Third Year—Second Semester.

1. Composition and Rhetoric.

Composition should be the chief characteristic of the work. Themes should be of considerable length, 100 to 1200 words, and should represent the pupil's best selection and most effective organization of his knowledge of the topics and of his ideas about it. The study of diction as a means to effective expression becomes of increasing importance.

2. Literature.

Same as for First Semester.

Fourth Year—First Semester.

1. Composition and Rhetoric.

Teachers should now begin to be able to perceive the stylistic tendencies of individual pupils. The work of the year should be directed to encourage these tendencies while ridding them of undesirable features. The aim should be not to have all write alike but to have each one write well in his own way. There should be one composition, perhaps an essay or short story, of more length than any hitherto undertaken.

2. Literature.

Selections as above.

2 a. If a text in English Literature was not introduced in the third year it should be introduced here and the reading should be guided by it as far as is possible.

Fourth Year—Second Semester.

1. Composition and Rhetoric.

Exposition and argument with much emphasis on the latter. At least one argument of considerable length developed through a brief prepared in consultation with the teacher. The subjects chosen should be interesting and within the grasp of the student. Local topics are particularly desirable. This paper should be a final test of the student's ability to write.

2. Literature.

Same as for First Semester.

The following lists of books are not intended to be complete but merely suggestive. There are many others equally as good.

GENERAL REFERENCE.

Green—A Short History of the English People Harpers
Garden—A Student's History of England..... Longmans
Thraill—Social England Longmans
Jasserand—Literary History of the English People..... Putnam
B. Ten Brink—History of English Literature..... Holt & Co.
Stopford Brooke—History of Early English Literature..... Macmillan
Woodberry—Makers of Literature Macmillan
Halleck—History of English Literature American Book
Welsh—Development of English Literature and Language.....

..... Scott Foresman
Painter—Introduction to English Literature Sibley & Co.
Pancoast—Introduction to English Literature Holt
Moody and Lovett—History of English Literature..... Scribners
Robertson—History of English Literature Harpers
Scudder—English Literature Globe School Book
Taine—History of English Literature Holt
Simonds—Students' History of English Literature..... Houghton Mifflin
Ward—The English Poets Macmillan
Craik—English Prose Macmillan
Pancoast—Standard English Poets Holt
Warner—Literary of the World's Best Literature.....

..... New York International Society
Clark—A Study of English Prose Writers Scribners
Clark—A Study of English Poets Scribners
Gwyn—The Masters of English Literature Macmillan
Arbo Bates—Talks on the Study of Literature..... Houghton Mifflin
Seccombe—Age of Johnson Bell
Reynolds—Treatment of Nature in English Poetry from Pope to

Wordsworth University of Chicago Press
Phelps—Romantic Movement Ginn
Beers—English Romanticism in the Eighteenth Century..... Holt
Symons—Romantic Movement in English Poetry Dutton Co.
Hereford—Age of Wadsworth Bell
J. Stuart Blackie—Burns Life Walter Scott Co.
Hall Caine—Coleridge Walter Scott Co.
Byron-Noel—English Men of Letters Series..... Harpers

Saintsbury—Nineteenth Century Literature	Harpers
English Romanticism in the Nineteenth Century	Holt
Stedman—Victorian Poets	Houghton Mifflin
Brandes—Eminent Authors of the Nineteenth Century.....	T. Y. Crowell
Baghot—Literary Studies	Longman, Green Co.
Hodgkins—Nineteenth Century Authors'	D. C. Heath
Cossee—Modern English Literature	Appleton's
Garnett—Carlyle's Life	Walter Scott Co.
Marzials—Dickens' Life	Walter Scott Co.
Oscar Browning—George Eliot, Life	Walter Scott Co.
Wm. Thackeray—Merivale and Marzials	Walter Scott Co.
Scott-Hutton—English Men of Letters Series	Harpers
Ruskin—Meynell	Dodd, Mead & Co.
Stevenson—Margaret Black	Scribners
Hugh Walker—Age of Tennyson	Bell
W. D. Howells—Heroines of Fiction	Harpers
M. E. Wells—Great Characters of Fiction.....	Gardner Dutton & Co.
Introduction to English Fiction	D. C. Heath
Bliss Perry—A Study of Prose Fiction	Houghton Mifflin
Stopford Brook—Tennyson, His Art and Relation to Modern Life...	Putnam Co.
Van Dyke—Poetry of Tennyson	Scribners
Alfred Lord Tennyson—Memoir of His Son	MacMillan
F. M. Wilson—Primer on Browning	Macmillan
Jones—Browning as a Philosophical and Religious Teacher...	Maclehose
Wm. Sharp—Browning	Walter Scott & Co.
Arnold—Saintsbury	Blackwood
Edward Dowden—Studies of Literature	London
Mabiel—Blackgrounds of Literature	Macmillan
Pancoast—Representative English Literature	Holt
Quart Hope—History of English Poetry	Holt
Lowell—Literary Essay	Houghton Mifflin
Lowell—Among My Books	Houghton Mifflin
Fields—Yesterdays With Authors	Houghton Mifflin
Scudder—Social Ideals in English Literature	Houghton Mifflin

Special Reference Works.

Garnett—Beowulf	Ginn & Co.
Cook and Tinker—Translations from Old English Poetry....	Ginn & Co.
Sidney Lanier—Boy's Mabinogian	Scribners
Skeat—Student's Chaucer	Clarendon Press
Snell—The Age of Chaucer	George Bell & Sons, London
English Wayfaring Life in the Fourteenth Century.....	Putnam
Skeat—Piers the Plowman	Clarendon Press
Snell—The Age of Transition.....	Geo. Bell & Sons, London
More—Utopia	Pitt Press Series
Pollard—English Miracle Plays	Clarendon Press
Lodge—Rosalind	
Manly—Specimens of Pre-Shakespearian Drama	Ginn & Co.
Marlowe's Plays—Mermaid Series	Scribners

- Seccombe and Allen—Age of Shakespeare Bell
 MacEwan—Freytag's Technique of the Drama..... Scott Foresman
 Hudson—Shakespeare, Life, Art and Characters..... Ginn
 Moulton—Shakespeare as a Dramatic Thinker..... Macmillan
 Moulton—Shakespeare as a Dramatic Artist..... Clarendon Press
 Mabie—Wm. Shakespeare, Poet, Dramatist and Man..... Macmillan
 Snider—The Shakespearian Drama..... Sigma Pub. Co., St. Louis
 Richard Grant White—Studies in Shakespeare..... Houghton Mifflin
 Fleming—Shakespeare's Plots Houghton Mifflin
 Winter—Shakespeare on the Stage..... Moffat, Yard & Co.
 Ten Brink—Five Lectures on Shakespeare Holt
 Corson—Introduction to the Study of Shakespeare... D. C. Heath & Co.
 Stopford Brooks—On Ten Plays of Shakespeare..... Holt
 Stephenson—Shakespeare's London Holt
 Rolfe—Shakespeare the Boy Harpers
 Goldwin Smith—Shakespeare the Man..... Doubleday Page Co.
 Wm. Shakespeare—A Study in Elizabethan Literature..... Scribners
 Ben Jonson—The Silent Woman, Mermaid Series..... Scribners
 (Work of other dramatists of this period are included in Mermaid
 Series of works of old dramatists.)
 Masterman—Age of Milton Bell
 Richard Garnett—Milton's Life Walter Scott Co., London
 Bacon—Essays and Advancement of Learning..... Macmillan
 Isaac Walton—Complete Angler; Along..... Dent, London
 Venables—Bunyan's Life..... Walter Scott Co., London
 Bunyan—Pilgrim's Progress (Golden Treasury Series..... Macmillan
 Richard Garnett—Age of Dryden..... Bell
 A. Dennis—Age of People Bell
 Craik—Jonathan Swift, Selections..... Clarendon Press
 Addison Selections—Golden Treasury Series..... Macmillan
 A. Ward—Pope, Poetical Works..... Globe Edition
 History of English Literature in the Eighteenth Century..... T. S. Perry
 Goose—Eighteenth Century Literature..... Clarendon Press
 Miller—Mid-Eighteenth Century Literature Scribners
 English Literature and Society in the Eighteenth Century.....
 Leslie Stephens—English Literature and Society in the Eighteenth
 Century Putnam
 Thackeray—English Humorists Macmillan

SOME SUGGESTED BOOKS.

Among the many books desirable, either as texts or as a working library for high school students of English, the following are suggested. There are many others equally useful. No reference is made to editions of English classics, concerning which teachers seeking information should correspond with the leading publishers.

Text and Reference Books for Pupils.

- Alden—The Art of Debate.....Holt
 Andrews—Specimens of Discourse.....Holt
 Baker—The Principles of Argumentation (Revised Edition).....Ginn
 Baker—Specimens of Argumentation (Modern).....Holt
 Baldwin—Specimens of Prose Narration.....Holt
 Bates, Arlo—Talks on the Study of Literature...Houghton Mifflin & Co.
 Bates, Arlo—Talks on the Writing of English.....Houghton Mifflin
 Brewster—Specimens of Prose Description.....Holt
 Campbell—Handbook of Synonyms and Prepositions....Lee & Shepherd
 Carpenter—Rhetoric and English Composition.....Macmillan
 Gardiner, Kittredge and Arnold—Manual of Composition and Rhetoric
Ginn
 Genung—The Working Principles of Rhetoric.....Ginn
 Hanson—English Composition Ginn
 Herrick and Damon—Composition and Rhetoric..Scott, Foresman & Co.
 Hill—Beginnings of Rhetoric and Composition.....American Book Co.
 Hitchcock—Practice Book in English Composition.....Holt
 Lamont—English Composition for High Schools.....Scribners
 Lamont—Specimens of Exposition.....Holt
 Laurie—S. S. Lectures on Language.....Macmillan
 Laycock and Spofford—Manual of Argumentation for High Schools...
Macmillan
 Lewis—Specimens of the Forms of Discourse.....Holt
 Macdonald's Foundation, English.
 McMurtry—How to Study.....Houghton, Mifflin & Co.
 Patterson—First Steps in English Composition.....
 Scott and Denny—Composition Rhetoric.....Allyn & Bacon
 Scott and Denny—Composition-Literature.....Allyn & Bacon
 Scott and Denny—Paragraph-Writing.....Allyn & Bacon
 Simons—First Year in English for High Schools...Silver Burdett & Co.
 Thomas and Howe—Composition and Rhetoric.....Longmans
 Thorndyke—The Elements of Rhetoric and Composition.....Century
 Webster—English Composition and Literature..Houghton, Mifflin & Co.
 Wendell—English Composition Scribners

Useful Books for Teachers of English.

- Carpenter, Baker and Scott—The Teaching of English.....Macmillan
 Clark, S. H.—How to Teach Reading.....Scott, Foresman & Co.
 Chubb—The Teaching of English.....Macmillan
 Education—Vol. XXV., No. 1, Sept., 1904.

Hinsdale—Teaching the Language Arts.....	Appleton
McMurry—Special Methods in the Reading of English Classics.....	
.....	Macmillan
Report of the Committee of Ten on Secondary Schools Studies.....	
.....	U. S. Bureau of Education
Sherman & Reed—The Essentials of Teaching Reading.....	
.....	University Publishing Co., Lincoln, Neb.
Spalding—The Principles of Rhetoric.....	Heath
Thomas—How to Teach English Classics.....	Houghton, Mifflin & Co.
Welch—Literature in the School.....	Silver Burdett & Co.
Welch—The Changing Values of English Speech.....	

PUBLIC SPEAKING.

A Neglected Field.

Almost nothing is being done with this subject in the High Schools of the State. Its importance deserves to secure for it more attention. A man's ability to stand before an audience and give clear, forcible expressions to his thought frequently determines his success or failure. The lack of this ability, moreover, puts a very great limitation upon the individual's usefulness in his profession and in civic life. Many teachers would be much better fitted for their positions than they are, if the schools had offered them even slight training in this direction.

Place in Curriculum.

The subject may well be offered as an elective, two hours per week, throughout the third and fourth years. Students may properly be encouraged to take it in addition to regular work. But this arrangement will still leave many to graduate without the desired training. There are two remedies, first, an added emphasis on this phase of the regular English work. Much more could be accomplished in connection with oral composition than is now accomplished. The same holds true in a limited degree of debates, special reports, etc., in history and many other subjects; second making the course a requirement instead of an elective in addition to the regular work.

Contents of Course.

1. Exercises in breathing, mechanics of speech and vocal culture.
2. Study and delivery of standard orations. Avoid the ornate type.
3. Writing, memorizing, and delivering original orations:

4. Similar work on standard poems.
5. Talking from notes on assigned topics that have been worked up in the library.

Aim.

The aim is not at all to produce elocutionists, but to train in fluent, sensible, effective talking.

SCIENCE.

Physical Geography.

Botany.

Zoology.

Physiology.

Physics.

Chemistry.

Biology.

Suggestion.

1. It is urged that no half year courses in any science be offered. Teach fewer subjects and those more thoroughly is the statement of a needed reform in our entire school system.

2. This recommendation is also in line with financial economy. In small schools, especially, a good equipment and a well prepared teacher in two or three sciences are much to be preferred to a poor equipment in five or six in some of which any teacher is certain to be but half prepared.

3. In the great and increasing development of technical occupations, High School science has a splendid opportunity. It is called upon to lay the foundations for that broad, practical, and accurate scientific knowledge which many of our modern industries demand.

4. Of course no High School nowadays expects to give a course in any science without laboratory work. In general the laboratory and (in some subjects), field exercises—should occupy approximately one-half of the time. Simple apparatus is usually best and an ingenious teacher with the help of his boys, can make much of it. Not infrequently there is good opportunity here for practical correlation with the manual training department. The school program should be so arranged as to allow two consecutive periods for laboratory work.

5. The purpose of the laboratory is not to mystify or amaze the students by spectacular performances. Experiments should be sufficiently simple to be clearly understood by the student

both as to apparatus, processes and results. If such is not the case the experiment is a failure.

6. Students should not be lead to expect accurate results. Perfect results are not obtained even with expensive apparatus unless by accident. At the same time it is one of the most essential attributes of the scientific attitude of mind to understand that even those imperfect results may most perfectly verify a principle or law.

7. Every student should be required to perform every exercise assigned and to secure, independently, results that are acceptable. Grades on the entire laboratory work may well be withheld, a grade of "Incomplete," being given until the work is done. Such an arrangement is now in force in several schools in the state and is everywhere reported to work well.

PHYSICAL GEOGRAPHY.

Suggestion.

1. In many ways this subject forms an excellent introduction to the general field covered by High School science. The competent teacher will introduce simple experiments from Physics, Chemistry, and Biology.

2. Since the laboratory side of this subject is less thoroughly developed than is that of any other science the following list of desirable equipment may be acceptable to many teachers.

1. Specimens of rocks and minerals.
2. Sheets for your locality and for typical regions from the United States Geological Survey Map.
3. Collection of rocks and minerals of your own vicinity.
4. Lantern slides, views of typical regions, formations and agencies.
5. Wall maps for Physical Geography.
6. Compass.
7. Meter sticks.
8. Thermometers.
9. Barometers (mercurial).
10. Magnets.
11. Sunboard.
12. Spherical blackboard.

13. A good globe.
14. Daily weather charts.

To These Might Be Added.

15. A soil thermometer.
16. An aneroid barometer.
17. A U. S. Weather Bureau rain gauge.
18. An anemometer.
19. A barograph.

Such a list of course could be indefinitely extended, but the above apparatus, especially the first fourteen articles will furnish a very effective working equipment for the average school.

The teachers will find useful, "The Use of Government Maps in Schools," Henry Holt & Company.

3. Physical Geography is preeminently an outdoor subject. Field trips, especially in a region so rich in physiographic materials as most parts of Montana, should be extremely valuable. They must be skillfully handled, however, especially with large classes, to prevent them from degenerating into picnics. Such trips should later always be made the subject of a class exercise of some sort.

BOTANY.

1. Recent years have seen a reaction against the detached, theoretical and excessively microscopic type of Botany teaching in the High School. It is a part of the general reaction against College domination in High School teaching.

2. The best thought among botany teachers at present seems to emphasize: (1) Plant physiology with special reference to plants that are of economic importance especially in the locality; (2) Unity of the plant world from the lowest to the highest form; (3) Systematic field work in ecology whenever possible.

3. Sexual reproduction should be as fully and frankly treated as is vegetative.

4. The making of an indiscriminate herbarium is not regarded as time well spent. For students who have the time and the inclination to make a collection of some sort, it is recommended that their herbarium represent some distinct idea in plant association or of representation of plant types, etc.

5. For schools maintaining a course in Agriculture there is

opportunity for very profitable correlation of courses. It is believed that a course in Botany taught so as to render it agriculturally profitable need not lose one particle of its general educational value. Likewise in horticultural sections of the state, the emphasis should be placed upon fruit plants.

6. On account of the late springs and early falls of Montana it is difficult to follow any text. The teacher must study the conditions of his own locality and adapt the course to them. Some ingenuity must be exercised to secure an arrangement at once logical and seasonal. For instance, the study of seeds naturally follows that of flowers, but for obvious reasons should be taken up in winter and flowers postponed until spring. In general ecological phases of the subject should be emphasized spring and fall physiological and morphological in the winter.

7. The subject should be made human by keeping constantly in evidence the relation to man and his welfare of the facts brought out. Practical bacteriology and forestry should receive notice.

8. The notebooks should be a correct and complete statement of the laboratory work. Neatness, accuracy and good English should be required.

ZOOLOGY.

Suggestion.

1. The compound microscope should not absorb too much time in Zoology. Animal life in its larger and particularly in its economic aspects is of more importance than a study of microscopic forms and structures. This does not mean that the microscope is not to be used but that its use is to be carefully limited.

2. The grasshopper is a good insect with which to begin in the fall. The laboratory work may be continued by the use of the frog, fish, bird, protozoan, mammal, reptile, crayfish, clam or other mussel, earthworm and hydra.

3. The general natural history—including external structures in relation to adaptations, life histories, geographical range, relations of the types studied to other animals and to plants. Exercises in the practical classification of animals. General plan of internal structure. Comparison of general

life processes in plants and animals. Very general but very candid treatment of sexual reproduction of some of the lower forms. The prominent similarities which suggest evolution. Some evidences of the struggle for existence, adaptations to environment, etc., should be noted. No attempt to present the scientific theory of evolution should be made. The class should gain some idea of the great discoveries and careers of such men as Darwin, Huxley, Pasteur and Agassiz.

4. The note books should furnish an accurate survey of the laboratory and field work, with drawings, some of which should be made under the compound microscope. Emphasis should be placed upon neatness, accuracy of observation and the correct use of English.

PHYSIOLOGY.

Suggestion.

1. This subject, for evident reasons, is of primary importance. For reasons not quite so evident it is almost wholly neglected in our High Schools. The emphasis which has long been placed upon anatomy and histology should be shifted to hygiene and sanitation and these should be treated both from the public and from the private view point.

2. When this change is made students will at once appreciate the practical value of the subject. It will cease to be academic and theoretical but will become intensely human, appealing to the strongest instincts of students of high school age.

3. All that has been said about laboratory work and note books under Botany and Zoology applies here.

Following are some typical suggestions as to the direction the course should take.

1. Brief consideration of human anatomy.

If students have previously had a course in Zoology or Biology, some further evidences of the evolutionary theory may well be pointed out.

2. Elementary study of cells, with more emphasis on function than on structure.

3. Food and food values.

5. Prevention and treatment of common diseases. Patent medicines.

BIOLOGY.

1. "The syllabus for Secondary Schools" of the New York State Education Department for 1910 thus sums up the aims of a High School course in Biology in the ninth grade.

(1) To give to boys and girls first hand-knowledge of some common plants and animals.

(2) To lead them to some understanding of the essential functions carried on by living things.

(3) To teach them something of the enormous economic importance to men of plant and animal products, and the necessity of conserving the biological resources of our country.

(4) To emphasize especially the essential conditions of individual and public health in city and state.

2. To give such a course with adequate results there must be good equipment and above all a thoroughly prepared teacher. If schools can not offer courses in all the biologic sciences, it is recommended that they concentrate on this and present it adequately.

PHYSICS.

Suggestions.

1. There is a wide difference of opinion on the question whether Physics should be required of all High School students and whether it should be taught in the third or fourth year. The tendency seems now to be in favor of the third. Certainly no student should be allowed to graduate without at least one year's work in science. Whether this should be in Physical or Biological science, is the real question at issue. It is recommended that neither one be absolutely required of all students but that every student be required to elect one or the other. Students should be encouraged to take both.

2. Of course Physics will be required of all students looking to engineering.

3. High School Physics suffered for many years by the introduction into its teaching of university methods and ideals and even of abridged university text-books. The subject was over-technical, too theoretical and bristled with mathematics beyond the knowledge of High School students. Few teachers now adhere, however, to that condition. The subject has

been rendered more human by the introduction of illustrations and applications drawn from scientific history and from real life.

List of Experiments.

MECHANICS—

1. Weight of unit volume of a substance, prism or cylinder.
2. Principle of Archimedes.
3. Specific gravity of a solid body that will sink in water.
4. Specific gravity of a liquid; two methods (bottle and displacement methods.)
5. Specific gravity of a liquid by balancing columns.
6. Boyle's Law.
7. Density of air.
8. Hooke's Law.
9. Strength of materials.
10. The straight lever, principle of moments.
11. Centre of gravity and weight of a lever.
12. Parallelogram of forces.
13. Four forces at right angles in one plane.
14. Coefficient of friction between solid bodies—on level and by sliding on an incline.
15. Efficiency test of some elementary machine either pulley, incline plane, or wheel and axle.
16. Laws of the pendulum.
17. Laws of accelerated motion.

HEAT—

18. The mercury thermometer: Relation between pressure of steam and its temperature.
19. Linear expansion of a solid.
20. Increase of pressure of a gas heated at constant volume; or
21. Increase of volume of a gas heated at constant pressure.
22. Heat of fusion of ice.
23. Cooling curve through change of state (during solidification).
24. Heat of vaporization of water.
25. Determination of the dew point.
26. Specific heat of a solid.

SOUND—

27. Velocity of sound.
28. Wave length of sound.
29. Number of vibrations of a tuning fork.

LIGHT—

30. Use of photometer.
31. Images in a plane mirror.
32. Images formed by a convex mirror.
33. Images formed by a concave mirror.
34. Index of refraction of glass:

Or,

35. Index of refraction of water.

36. Focal length and conjugate foci of a converging lens.
37. Shape and size of a real image formed by a lens.
38. Magnifying power of a lens.
39. Construction of model of telescope or compound microscope.

MAGNETISM AND ELECTRICITY—

40. Study of magnetic field.
41. Magnetic induction.
42. Study of a single fluid voltaic cell.
43. Study of a two-fluid voltaic cell.
44. Magnetic effect of an electric current.
45. Electrolysis.
46. Laws of electrical resistance of wires: Various lengths cross section and in parallel.
47. Resistance measured by volt-ammeter method.
48. Resistance measured by Wheatstone's bridge.
49. Battery resistance—combination of cells.
50. Study of induced currents.
51. Power or efficiency test of a small electric motor.

Every successful teacher will modify these according to locality to bring them as far as possible within the experience of his pupils.

4. In addition to general suggestions already given as to laboratory work and notebooks the following are perhaps worth while:

1. The purpose of every experiment should be clearly stated.
2. There should be a brief description of the experiment. Illustrative drawings should be purely illustrative, not ornamental.
3. Numerical data should be neatly tabulated.
4. Statements of reasoning and conclusions should be brief, clear, logical, after the models of geometry.
5. In order that the teacher may be certain of the independent character of the work note books should rarely or never be taken from the laboratory.

6. The following list of topics for a course in Physics is that adopted by the North Central Association of Colleges and Secondary Schools to which would now have to be added the wave theory of electricity and its applications:

1. Weight, center of gravity.
2. Density.
3. Parallelogram of force.
4. Atmospheric pressure; barometer.
5. Boyle's law.

6. Pressure due to gravity in liquids with a free surface; varying depth, density, and shape of vessel.
7. Buoyancy; Archimedes' Principle.
8. Pascal's law, hydraulic press.
9. Work as force times distance and its measurement in foot, pounds and gram-centimeters.
10. Energy measured by work.
11. Law of machines, work obtained not greater than work put in; efficiency.
12. Inclined plane.
13. Pulleys, wheel and axle.
14. Measurement of moments by the product of force times arm; levers.
15. Thermometers; Fahrenheit and centigrade scales.
16. Heat quantity and its measurements in gramcalories.
17. Specific heat.
18. Evaporation; heat of vaporization of water.
19. Dew point; clouds and rain.
20. Fusion and solidification; heat of fusion.
21. Heat transference; conduction and convection.
22. Qualitative description of the transfer of energy by waves.
23. Wave length and period of waves.
24. Sound originates at a vibrating body and is transmitted by waves in air.
25. Pitch and period of sound.
26. Relation between the wave length of a tone and the length of a string or organ pipe.
27. Resonance.
28. Beats.
29. Rectilinear propagation of light; pin-hole cameras.
30. Reflection and its laws; image in a plane mirror.
31. Refraction and its use in lenses; the eye; the camera.
32. Prisms and dispersion.
33. Velocity of light.
34. Magnetic attractions and repulsions.
35. Field of force about a magnet.
36. The earth a magnet; compass.
37. Electricity by friction.
38. Conductors and insulators.
39. Simple galvanic cell.
40. Electrolysis; definition of the amperes.
41. Heating effects; resistance; definition of the ohm.
42. Ohm's law; definition of the volt.
43. Magnetic field about a current.
44. Electromagnetic induction.
45. Simple alternating current dynamo of one loop.
46. Electromagnetic induction by breaking a circuit; primary and secondary.
47. Conservation of energy.
48. Wave theory.

Numerous excellent laboratory manuals are published. From them teachers may receive much helpful information as to laboratory equipment and experiments. Hot and cold water, gas and electricity should be available in the laboratory if in any way possible. Schools in towns where there is no gas supply may remedy the defect by installing a gas plant of their own. These plants are not excessively expensive when one considers the waste, inconvenience, and danger of alcohol lamps. The one manufactured by the Matthews Gas Machine Company of Chicago is giving satisfaction in the state

CHEMISTRY.

Suggestions.

1. This subject, the most highly specialized and technical of all the High School Sciences, should be taught in the Senior year and offered only when good laboratory equipment can be had.

2. For satisfactory laboratory work, water is the first essential hot and cold, if possible, while gas and electricity follow closely. Alcohol lamps are a poor substitute for gas.

3. With the introduction of Agriculture and Domestic Science into our schools has come the need of furnishing instruction in the chemical phase of those subjects. Most schools do not feel able to establish separate and partially duplicate courses and thus has arisen the problem of how to modify the regular course in chemistry so as at once to meet the demands of the colleges, and the needs of agriculture and of cooking. The problem is by no means a simple one and any general suggestion that may be made will fail unless the individual teacher applies time, patience, and much study to his particular situation.

Mr. George B. Aiton, inspector of High Schools for Minnesota, recommends, that about Thanksgiving the class in Chemistry be divided into two divisions one composed of girls to take up the question of sanitation and foods; the other composed of boys to study agricultural chemistry. These sections might recite every other day with laboratory days intervening. In the spring these sections might be reunited for further work in chemical theory.

The objection to such an arrangement will arise from two causes:

1. Cooking and the study of soils are usually taught within the first two years of the High School course, while Chemistry is invariably and for good reasons, taught within the last two. This means that students in Cooking and Agriculture must take their Chemistry with students much more mature or that they must take it one or two years after the completion of the course to which it is supposed to relate. Both alternatives are bad. (2) Strictly college preparatory students, especially those looking toward technical industrial or engineering work do not desire to have the applications and illustrations of their chemical theory drawn from cooking and agriculture. Other industrial fields are much more important for them. No means for avoiding these difficulties has been suggested. It therefore seems best, unless the exigencies of the school require it, that no attempt be made to unite these diverse and conflicting demands but that the requisite Chemistry for each course be taught separately.

4. Most of what has previously been said with reference to laboratory work in other sciences may be applied here.

5. The chief thing to be avoided is making the work too technical and theoretical. Chemical theory is so unstable that it forms very unsatisfactory material for the consideration of High School students. Only the absolute essentials of the theory should be taught, but much time spent upon applied chemistry.

HISTORY.

Subdivisions.

1. The High School courses in History as commonly arranged are as follows:

First Year—Greek and Roman History.

Second Year—Medieval and Modern History.

Third Year—English History.

Fourth Year—American History and Civics.

Alternative Arrangement.

First Year—Greek and Roman History.

Second Year—English History with strong emphasis on English relations to Western Europe.

Third Year—American History.

Fourth Year—Civil Government of the United States with considerable attention to elementary economics and sociology.

2. These arrangements probably cannot be improved upon for the large school. For the smaller school several modifications may be suggested.

1. The second and third year courses may be alternated.
2. In schools where even with this alternation, it still seems unwise, to attempt four courses in History, the following arrangement is recommended: For the first year; eight to twelve weeks devoted to Ancient History and the balance of the year to English History to be followed by American History and Civics in the fourth year.
3. The attempt to cover the whole historical field by a course in General History does not meet with approval.

The hardest problem of the course probably arises in the Senior year when the attempt is made to cover the entire field of American History and Government. It seems to be the almost universal experience of High School history teachers that the eighth grade work in those subjects has well nigh vanished from the minds of the twelfth grade students. It cannot be depended upon to furnish a basis for any material relief. The only practical suggestion looking to the lightening of this year's work that has come to notice is that in the course in English History, sufficient emphasis be given to its American aspects up to the end of the Colonial Period, 1760, so that in the course in American History, it will be possible to dismiss that much of the subject after a brief review. The review should be of such nature as to enable the students to obtain a clear understanding of the causes of the Revolution, and of the problems confronting the Colonists thereafter. It is hoped that texts based upon this suggestion will soon appear. Of course this difficulty does not arise in the second arrangement suggested above.

General Suggestion.

The aim of all history teaching should be not the memorizing of a category of facts, but the development of the social

sense, the ability better to understand the institutions and life of the modern world and better to find one's place in it.

"History may be said to put the third dimension into the field of knowledge. It gives it depth, by extending it backward in time, which is a liberalizing effect. In relation to the other subjects, history is chiefly preparatory. Language, literature, art, and philosophy and certain aspects even of science, cannot be fully understood without history. But the chief value of history is the social. Says Dewey:

"The evils of the present industrial and political situation, on the ethical side are not due so much to actual perverseness on the part of the individuals concerned, nor to mere ignorance of what constitutes the ordinary virtues (such as honesty, industry, purity, etc.) as to the inability to appreciate the social environment in which we live. It is tremendously complex and confused. Only a mind trained to grasp social situations and to reduce them to their simpler and typical elements, can get sufficient hold on the realities of this life to see what sort of action, critical and constructive, it really demands. Most people are left at the mercy of tradition, impulse, or the appeals of those who have special and class interests to serve. In relation to this highly complicated social environment, training for citizenship is formal and nominal unless it develops the power of observation, analysis, and the agencies through which it is modified. Because history rightly taught is the chief instrumentality for accomplishing this, it has an ultimate ethical value.

"History gives social insight by revealing both the genesis and structure of the social order and the conditions of social advance. Present social life is so complex that its elements cannot be grasped when approached directly. These elements must be approached historically, and traced from their inception, if their real significance is to be appreciated. From Greece we get the significance of art and individual initiative, from Rome the principles of political organization, from Palestine the heart of our moral and religious life, and from the Middle Ages many minor customs and practices. Anthropology which may be regarded as a phase of history, carries this analysis still farther back, giving us the initial development of the very elements of civilization.

The conditions of social progress can be apprehended directly still less. Although the causes of advances and retrogressions are complex, they may in measure be ferreted out and made available for the present and the future. Types of the influences involved here are the attitude toward individual initiative; toward freedom of the press, speech, belief; toward civic and personal righteousness; and the effect of inventions, of international commerce, and of the dissemination of education. Nations, like individuals, must live according to the principles of enlightenment, and justice, and both this fact and the principles involved can be appreciated fully only through the study of history."

—Ruediger, Principles of Education.

However, teachers must not come to despise facts. An accurate and sufficiently extensive knowledge of them is an essential means to the desired end. Even dates must be memorized in sufficient numbers to furnish a working outline of the subject. But the facts must be so employed as to make the subject a thoroughly rational one, inducing pupils to weigh evidence and draw conclusions. W. E. H. Lecky said:

“History is one of the best schools for that kind of reasoning which is most useful in practical life.”

How many teachers make it so?

The emphasis should be placed upon political, social and economic development. Very little time should be given to purely military affairs. Ethical and patriotic lessons should be unavoidable by-products of the teaching of history. They should not be dragged in by force like the moral in a fable.

Every visual aid which the teacher can employ from the illustrations in the texts up to a judicious use of the sources adds effectiveness to the instruction. A constant reference to geography is one of the most effective aids. Map drawing should be included in every course. Outline maps are recommended, saving much time for both students and teachers. Such maps may be obtained from McKinley Publishing Company, Germantown Avenue, Philadelphia, Atkinson, Mentzer and Grover, Chicago, and elsewhere.

If the school is provided with a stereopticon, especially of the new reflecting type, it can be made a most valuable aid to the history teacher.

GREEK AND ROMAN HISTORY.

Suggestions.

This course, coming as it does in the ninth grade, furnishes the student his first introduction to the study of peoples far distant in time and place. It is therefore peculiarly important and peculiarly difficult. In the hands of an inexperienced teacher, it is likely to sicken pupils of the whole subject. Great pains must be taken to create clear and correct mental images of ancient life. Pupils in possession of such images will be interested. To this end, maps, pictures, guide-books, stereopticon slides and other illustrative material, should be used in abundance.

The subject will introduce to the average ninth grader a vocabulary containing a very large percentage of new words and phrases. Teachers should take great pains in assigning lessons to see that words in the following day's work are understood. In fact the course in Ancient History presents almost innumerable difficulties to the High School teacher, a condition to which successful teachers are keenly alive.

Outline of Course.

First Semester.

1. The Nile—Tigris and Euphrates valleys.
2. Hellenic development to 750 B. C.
3. Tendencies in Greece to the Persian Wars.
4. Foreign Wars of 479 B. C.
5. Athenian supremacy 479-431 B. C.
6. Internal discensions; rise of Macedonia, 461-362 B. C.
7. Alexander and the Hellenistic Movement, 336-146 B. C.

Second Semester.

1. Rome from the foundation of the city to its supremacy in Italy. 753-264 B. C.
2. The Conquest of the Mediterranean region. 264-133 B. C.
3. Republic overthrown; monarchy established, 133-31 B. C.
4. The Roman world under the empire. 31 B. C. 375 A. D.
5. The coming of the Teutons and the foundations of medieval Europe. 367 to 800 A. D.

REFERENCE BOOKS IN ANCIENT HISTORY.

For the following list of books on this subject, than which it would be difficult to find one better suited to the needs of the high school, we are indebted to the list of books published by the Oregon Library Commission, 1907.

- Abbott, Evelyn—History of Greece. 3 Vols.....Putnam
 Abbott, Evelyn—Pericles and the Golden Age of Athens.....Putnam
 Abbott, Evelyn—History and description of Roman Institutions....Ginn
 Botsford, G. W.—History of the Orient and Greece.....Macmillan
 Botsford, G. W.—Ancient History for Beginners.....
 Botsford & Botsford—L. S. Story of Rome as Greeks and Romans
 Tell It Macmillan
 Bury, J. B.—History of Greece to the death of Alexander the Great.
 Macmillan
 Church, A. J.—Roman Life in the Days of Cicero.....Macmillan
 Church, A. J.—Stories of the East from Herodotus.....Dodd
 Davidson, J. L.—Strachan. Cicero and the Fall of the Roman Re-
 public Putnam
 Day, Edward—The Social Life of the Hebrews.....Scribner
 Dill, Samuel—Roman Society in the Last Century of the Western
 Empire Macmillan

- Firth, J. B.—Augustus Caesar Putnam
 Fling, F. M.—Source Book of Greek History Heath
 Fowler, W. W.—The City State of the Greeks and Romans...Macmillan
 Fowler, W. W.—Julius Caesar and the Foundation of the Roman Im-
 perial System Putnam
 Goodspeed, G. S.—A History of the Ancient World.....Scribner
 Goodspeed, G. S.—History of the Babylonians and Assyrians....Scribner
 Gow, James—A Companion to School Classics.....Macmillan
 Greenridge, A. H. J.—A Handbook of Greek Constitutional History
 Macmillan
 Gulick, C. B.—Life of the Ancient Greeks, With Special Reference
 to Athens Appleton
 Harper's Dictionary of Classical Literature and Antiquities; Ed. by
 H. T. Peck American Book Co.
 Hoernes, Moriz—Primitive Man Macmillan
 How and Leigh—History of Rome.....Longmans
 Inge, W. R.—Society in Rome Under the Caesars.....Scribner
 Johnston, W. H.—Private Life of the Romans.....Scott
 Lord, J. K.—Atlas of the Geography and History of the Ancient
 World Sanborn
 Mahaffay, J. P.—Old Greek Life.....American Book Co.
 Mahaffay, J. P.—The Story of Alexander's Empire.....Putnam
 Maspero, G. C. C.—Life in Ancient Egypt and Assyria.....Appleton
 Morris, W. O.—Hannibal, Soldier, Statesman, Patriot; and the Crisis
 of the Struggle Between Carthage and Rome.....Putnam
 Munro, D. C.—Source, Book of Roman History.....Heath
 Pelham, H. F.—Outlines of Roman History.....Putnam
 Plutarch—Lives. 2 Vols. Burt
 Seignobos, Charles—History of Ancient Civilization, Translated and
 Edited by A. H. Wilde.....Scribner
 Shuckburg, E. S.—Short History of the Greeks.....Cambridge
 Tozer, H. F.—Classical Geography.....American Book Co.
 Wendel, F. C. H.—History of Egypt.....American Book Co.
 West, W. M.—Ancient History to the Death of Charlemagne.....Allyn
 Wheeler, B. U.—Alexander the Great Putnam
 Wolfson, A. M.—Essentials in Ancient History; from the earliest
 records to Charlemagne.....American Book Co.
 Translations:
 Plutarch's Lives.
 Livy.
 Odyssey & Iliad.

MODERN AND MEDIEVAL HISTORY.

This course presents more difficulties from the standpoint of content than any other. The great purpose of the course is to show how the modern world was evolved from the ancient; to trace modern institutions from their origins in the ancient or medieval world. The emphasis should be placed upon the modern field.

Outline of Course.

First Semester.

1. A brief review of the contributions made to civilization by the Hebrews, Greeks and Romans. What the medieval world started with.
2. The settlements of the Teutons in western Europe and the origin of the great modern states.
3. The church, its origin, and growth as a spiritual and temporal power; its influence and the decline of its political authority.
4. Feudalism; origin, development and decline.
5. The Crusades, Renaissance, Beginnings of Protestant Reformation.

Second Semester.

1. The Reformation.
2. English Revolution of the 17th century.
3. The growth of the consolidated monarchy at the expense of feudalism in France.
4. England as a colonizing power. 1497-1763.
5. The balance of power. Rise of Russia and Prussia.
6. The French Revolution.
7. Unification of Italy and Germany.
8. Growth of Constitutionalism.
9. The near east and the far west.
10. Recent events in Persia and China; their significance.

LISTS OF BOOKS ON MODERN AND MEDIEVAL HISTORY.

- Adams, C. B.—Civilization During the Middle Ages.....Scribner
 Adams, C. B.—European History Macmillan
 Adams, C. B.—Growth of the French Nation.....Macmillan
 Andrews, C. M.—Historical Development of Modern Europe.....Putnam
 Archer & Kingford—The Crusades.....Putnam
 Bryce, James—Holy Roman Empire.....Macmillan
 Cunningham, William—An Essay on Western Civilization in Its
 Economic Aspects; Medieval and Modern Times.....Cambridge
 Davis, H. W. C.—Charlemagne.....American Book Co.
 Eginhard—Life of Charlemagne.....American Book Co.
 Emerton, Ephraim—Introduction to the Study of the Middle Ages..Ginn
 Fisher, G. C.—Outlines of Universal History.....American Book Co.
 Fournier, August—Napoleon the First; Edited by E. G. Bourne.....Holt
 Fyffe, C. A.—History of Modern Europe.....Holt
 Gardiner, Mrs. B. M. C.—French Revolution.....Longmans
 Guerber, H. L.—Legends of the Middle Ages.....American Book Co.

- Harding, S. B.—Essentials in Medieval and Modern History.....
American Book Co.
 Hassall, Arthur—The French People.....Appleton
 Haydn, J. T.—Dictionary of dates and universal information relating
 to all ages and nations, containing the history of the world to
 the end of 1903 Putnam
 Headlam, J. W.—Bismarck and the Foundation of the German Empire.
 Henderson, B. F.—Short History of Germany.....Macmillan
 Hume, M. A. S.—Modern Spain. 1788-1898.....Putnam
 Hume, M. A. S.—Spain, Its Greatness and Decay. 1479-1788....Putnam
 Irving, Washington—Chronicle of the Conquest of Granada.....Putnam
 Johnson, A. H.—Normans in Europe.....Longmans
 Labberton, R. H.—Historical Atlas, 3800 B. C. to 1900 A. D.....Silver
 Larned, J. N.—History for Ready Reference.....Nichols
 Lodge, Richard—Close of the Middle Ages. 1273-1494.....Macmillan
 Longman, F. W.—Frederick the Great and the Seven Year's War..
 Longmans
 Lowell, E. J.—Eve of the French Revolution.....Houghton
 Mohammed—Speeches and Table Talk of Mohammed; Edited by
 Stanley Lane-Poole Macmillan
 Motley, J. L.—Peter the Great.....Maynard
 Motley, J. L.—Rise of the Dutch Republic.....Crowell
 Munro, D. C.—History of the Middle Ages.....Appleton
 Oman, C. W. C.—The Dark Ages.....Macmillan
 Orsi, Pietro—Modern Italy, 1748-1898.....Putnam
 Ploetz, Carl—Epitome of Ancient, Medieval and Modern History...
 Houghton
 Lane-Poole Stanley—Moors in Spain Putnam
 Lane-Poole Stanley—Saladin and the Fall of the Kingdom of Jerusa-
 lem Putnam
 Putzger, F. W.—Historischer Schul Atlas zur Alten Mittlern und
 Neuen Gesichten. Revised Edition.....Lemck
 Robinson, J. H.—Introduction to the History of Western Europe...Ginn
 Robinson, J. H.—Readings in European History.....Ginn
 Rose, J. H.—Revolutionary and Napoleonic Era, 1789-1815....Cambridge
 Sedgwick, H. D. Jr.—Short History of Italy.....Houghton
 Seebohm, Frederic—The Era of the Protestant Revolution...Longmans
 Symonds, J. A.—Short History of the Renaissance in Italy.....Holt
 Thatcher and McNeal—A Source-Book of Medieval History....Scribner

ENGLISH HISTORY.

1. It is impossible without going more into detail than the limits of this pamphlet permit, to offer an outline of the field of English History, which would be applicable to all the various suggestions made above with reference to that subject. A very general outline as in the other sources is therefore offered and individual teachers are left to make their own adaptations.

Outline of Course.

1. Celtic and Roman Britain to 449 A. D.
2. Saxon England to 1066.
3. Norman England to 1154.
4. England under the Plantagenets to 1485.
5. England under the Tudors to 1603.
6. The Stuarts, the Revolution and American Colonization, 1603-1688.
7. Constitutionalism and Colonial Expansion. Relation with American Colonization, 1688-1820.
8. Imperialism, 1820—
9. Growth of the Democratic Spirit.

LIST OF REFERENCE BOOKS ON ENGLISH HISTORY.

- Andrews, C. M.—History of England.....Allyn
 Beteson, Mary—Medieval England.....Putnam
 Beard, C. A.—An Introduction to the English Historians.....
 Besant, Sir Walter—Story of King Alfred.....Appleton
 Bolton, Mrs. S. K.—Famous English Statesmen of Queen Victoria's
 Reign Crowell
 Bryce, James—William Ewart Gladstone.....Century
 Cheyney, E. P.—An Introduction to the Industrial and Social His-
 tory of England Macmillan
 Cheyney, E. P.—A Short History of England.....Macmillan
 Cheyney, E. P.—Readings in English History.....Ginn
 Colby, E.—Selections from the Sources of English History....Longmans
 Firth, C. H.—Oliver Cromwell and the Rule of the Puritans in England.
 Freeman, E. A.—William the Conqueror.....Macmillan
 Froude, J. A.—English Seamen in the Sixteenth Century.....Scribner
 Gardiner, S. R.—Atlas of English History.....Longmans
 Gardiner, S. R.—First Two Stuarts and the Puritan Revolution,
 1603-60 Longmans
 Gardiner, S. R.—Student's History of England from the Earliest
 Times to 1885.....Longmans
 Green, J. R.—Short History of the English People...American Book Co.
 Green, W. D.—William Pitt, Earl of Chatham and the Growth and
 Division of the British Empire.....Putnam
 Harrison, Frederic—Oliver Cromwell.....Macmillan
 Hooper, George—Wellington Macmillan
 Johnston and Spencer—Ireland's Story.....Houghton

Kendall, E. K.—Source Book of English History.....	Macmillan
Larned, J. M.—History of England.....	Houghton
McCarthy, Justin—British Political Portraits.....	Macmillan
McCarthy, Justin—Epoch of Reform, 1830-1850.....	Longmans
McCarthy, Justin—Story of the People in England in the Nineteenth Century. 2 Vols.	Putnam
Moberly, C. E.—The early Tudors.....	Longmans
Morley, John—Walpole	Macmillan
Oman, C. W. C.—England in the Nineteenth Century.....	Longmans
Plummer, Charles—The Life and Times of Alfred the Great.....	
Reich, Emil—New Student's Atlas of English History.....	Macmillan
Rose, J. H.—The Rise and Growth of Democracy in England....	Duffield
Seelye, Sir J. R.—Expansion in England.....	Little
Stubbs, William—The Early Plantagenets.....	Longmans
Synge, M. B.—A Short Story of Social Life in England.....	
Trail, H. D.—William III. Conqueror.....	
Walker, A. P.—Essentials in English History.....	American Book Co.
Woodward, W. H.—Short History of the Expansion of the British Empire	Cambridge
Wrong, G. M.—The British Nation.....	Appleton

AMERICAN HISTORY AND CIVICS.

1. No attempt is made to divide the work by semesters.
2. In any High School course in History which is so planned as to require American History and Civics to be given in a single year, the preceding course, whether in English or in general Medieval and Modern History, should have been so handled as to make it possible to cover the periods of American discovery and colonization by means of a brief review.
3. It is the belief of this department that there should be no formal division between the work in civics and in history in these courses; that instead of teaching, say a half year of each, the two should be regarded as one subject, treating the origin and development of our political system in their proper historical setting. Many teachers, however, will prefer to handle the subjects separately. In that case about three-fifths of the time should be given to history and two-fifths to civics. The work in the text books in High School civics should be supplemented by a study of local civics under the teacher's careful direction. The aim is not to teach political statistics but to produce good citizens, intelligently and sincerely devoted to what is right in government.
4. There is probably a tendency among High School teachers of United States History to devote a disproportionate

amount of time to the "critical period" and to matters affecting slavery. Our traditional point of view, of course, favors such a result. But it seems now time for us to realize that the period from 1865 down is really of prime importance inasmuch as most of the great issues of today have had if not their origins, at any rate their chief acceleration since that time.

5. In case it is possible to devote an entire year to U. S. History alone, the result should prove very satisfactory. It should be possible to use some such substantial text as Channings, Student's History and to do much outside work.

6. Likewise a whole year devoted to Civics in the hands of a skillful and well prepared teacher, should be as valuable as any year's work which can be done in the High School. Such a book as A. B. Hart's Actual Government suggests the ground which the course should cover.

7. Many history teachers need to be reminded that history is still in the making. No opportunity should be lost to connect past events with present conditions; students should be encouraged to look for such relationships and to follow out their course. The work in Modern, in English and in American History should be so planned as to leave opportunity for the study of contemporary conditions, events and tendencies. They should leave the pupil in touch with things as they are now, not as they were ten or twenty years ago.

Of course to accomplish this result the teacher must keep himself well informed and the school should itself subscribe to such reviews as the Literary Digest, Outlook, Review of Reviews, World's Work, Pathfinder, Current Events, etc.

Outline of Course.

1. The period from 1760 to 1783 should be treated from the standpoint of the cause and results of the Revolution with very slight attention to military details.

2. Government under Confederation, formation and adoption of Constitution, 1781-1789.

3. Political development, 1789-1829.

4. Economic, social and industrial development, 1760-1829.

5. Political History, 1829-1865.

6. Territorial, commercial, industrial and social progress, 1829-1865.

7. Political History, 1865.

8. Territorial, commercial, industrial, and social progress, 1865.

(Previous to 1760, the work should be in the nature of a review noting only topics of prime importance.)

LISTS OF REFERENCE BOOKS IN AMERICAN HISTORY.

- Brady, C. T.—Border Fights and Fighters.....McClure
 Brigham, A. P.—Geographic Influences in American History.....Ginn
 Burgess, J. W.—The Civil War and the constitution. 2 Vols....Ser'bner
 Burgess, J. W.—The Middle Period.....Scribner
 Burgess, J. W.—Reconstruction and the Constitution.....Scribner
 Cambridge—Modern History Macmillan
 Channing, Edward—History of the United States.....Macmillan
 Channing & Hart—Guide to the Study of American History.....Ginn
 Coman, Katherine—Industrial History of the United States...Macmillan
 Dodge, T. A.—A Birdseye View of Our Civil War.....Houghton
 Earle, Mrs. A. M.—Home Life in Colonial Days.....Grosset
 Eggleston, G. C.—A Rebel's Recollections.....Putnam
 Elson, H. W.—History of the United States.....Macmillan
 Fisher, G. P.—The Colonial Era.....Scribner
 Fiske, John—The American Revolution. 2 Vols.....Houghton
 Fiske, John—Beginning of New England.....Houghton
 Fiske, John—Critical Period of American History.....Houghton
 Fiske, John—Discovery of America. 2 Vols.....Houghton
 Fiske, John—Dutch and Quaker Colonies in America.....Houghton
 Fiske, John—New France and New England.....Houghton
 Fiske, John—Old Virginia and Her Neighbors. 2 Vols.....Houghton
 Gordon, J. B.—Reminiscences of the Civil War.....Scribner
 Gordy, J. O.—Political History of the United States.....Holt
 Hart, A. B.—Essentials in American History.....American Book Co.
 Hart, A. B.—Formation of the Union.....Longmans
 Hart, A. B.—American History Told by Contemporaries. 4 Vols...
Macmillan
 Cheyney, E. P.—European Background of American History (Ameri-
 can Nation Series).....Harper
 Bourne, E. G.—Spain in America (American Nation Series)....Harper
 Howard, G. E.—Preliminaries of the Revolution (American Nation
 Series) Harper
 McLaughlin, A. C.—The Confederation of the Constitution (Ameri-
 can Nation Series) Harper
 Turner, F. J.—Rise of the New West (American Nation Series)..Harper
 Hart, A. B.—Slavery and Abolition (American Nation Series)...Harper
 Garrison, G. P.—Westward Extension (American Nation Series)..Harper
 Smith, T. C.—Parties and Slavery (American Nation Series)...Harper
 Chadwick, F. E.—Causes of the Civil War (American Nation Series)
Harper
 Hosmer, J. K.—The Appeal to Arms American Nation Series)...Harper
 Hosmer, J. K.—Outcome of the Civil War (American Nation Series)
Harper

- Hill, Mabel—Liberty Documents.....Longmans
 Johnston, Alexander—American Orations. 4 Vols.....Putnam
 Lecky, W. E. H.—American Revolution.....Appleton
 Lodge, H. C.—Short History of the English Colonies in America...Harper
 Macdonald, William—Select Chapters and Other Documents Illustrative of American History.....Macmillan
 Macdonald, William—Select Statutes and Other Documents Illustrative of the History of the United States.....Macmillan
 McLaughlin, — C.—History of the American Nation.....Appleton
 McMaster, J. B.—History of the People of the United States from the Revolution to the Civil War.....Appleton
 Madison, James—Journal of the Federal Convention.....Scott
 Mowry, W. A.—Territorial Growth of the United States.....Silver
 Parkman, Francis—Conspiracy of Pontiac and the Indian War After the Conquest of Canada.....Burt
 Parkman, Francis—County Frontenac and New France Under Louis XIV. Little
 Parkman, Francis—A Half Century of Conflict. 2 vols.....Little
 Parkman, Francis—The Jesuits in North America in the Seventeenth Century Little
 Parkman, Francis—Montcalm and Wolfe. 2 Vols.....Little
 Parkman, Francis—Pioneers of France and the New World.....Little
 Parkman, Francis—Struggle for a Continent.....Little
 Rhodes, J. F.—History of the United States from the Compromise of 1850. 7 Vols.....Macmillan
 Roosevelt, Theodore—Episodes from the Winning of the West..Putnam
 Rouse, A. L.—National Documents.....Unit
 Schouler, James—History of the United States of America Under the Constitution Dodd
 Sloane, W. M.—The French War and the Revolution.....Scribner
 Sparks, E. E.—Expansion of the American People.....Scott
 Sparks, E. E.—The Men Who Made the Nation.....Macmillan
 Spears, J. R.—Short History of the American Navy.....Scribner
 Thwaites, R. G.—The Colonies.....Longmans
 Walker, F. A.—Making the Nation.....Scribner
 Wilson, Woodrow—Division and Reunion.....Longmans
 Wilson, Woodrow—History of the American People. 5 Vols....Harper

No satisfactory course in High School History can be taught without reasonable library facilities. The lists of reference works appended at the discussions of the various sub-divisions of the field of History will suggest what is meant by reasonable facilities. References for student's reading especially in the early years of High School should be given in very explicit form, volume and page, and some time should be spent in teaching students the use of books.

The note-book, preferably the loose-leaf variety, should find a place in every High School course in History. Many inex-

perienced teachers fall into the mistake of greatly overdoing the notebook work, regarding it as an end in itself instead of as a purely supplementary aid in the illumination and organization of facts. Long and complicated outlines of the texts are not profitable note-book material, if indeed, they are useful at all. Maps, notes on assigned readings, tabulations, and graphic representations, chronological tables, lecture notes, and newspaper clippings are suggested as desirable.

MATHEMATICS.

Elementary Algebra.

Plane Geometry.

Advanced Algebra.

Solid Geometry.

Advanced Arithmetic.

Trigonometry.

The department recommends the following arrangement of subjects:

First Year—Elementary Algebra.

Second Year—Plane Geometry.

Third Year—Advanced Algebra.

Fourth Year—Solid Geometry and Trigonometry or
Advanced Arithmetic.

Suggestions.

1. The N. E. A., last summer in adopting the report of the Committee on the Articulation of High School and College, gave its sanction to a High School course with electives so arranged as to enable a student to graduate without any mathematics whatever. Accredited High Schools in Montana must require not less than two years. It is recommended that not more than two years be required. Students of special aptitude or who are looking forward to an engineering education should be required to take three or still better four years.

2. Mathematics holds its place, entirely in so far as it is required of all pupils, by reason of its value, real or supposed, in training the mind in clear and independent reasoning. Unless the teaching of the subject actually contributes powerfully to such a result, the time could be spent to much better advantage on other subjects. To this end the only standard should be absolute accuracy and complete independence of work. Methods of checking results should be employed instead of answer books.

3. High School mathematics introduce the student to a

large number of new terms. These need to be so thoroughly mastered that they become as familiar as the most ordinary household words. The student whose mental reaction upon such words as "coefficient" or "bisector" is not perfectly automatic, can not travel far toward a mastery of the real difficulties of the subject.

ELEMENTARY ALGEBRA.

Outline.

1. The four fundamental operations with both whole numbers and fractions.

2. Factoring.

These are the essentials and their absolute mastery is vastly more important than the solution of a large number of equations.

3. The solution of equations both simple and simultaneous containing from one to three unknowns.

The graph should be introduced and used sufficiently to convince the student of the possibility of representing algebraic relations geometrically and to illustrate by practical problems the use of the graph in representing the relations of scientific and statistical data, etc. The treatment in Hawkes, Luby and Touton, First Course in Algebra is satisfactory.

4. Reduction of all fractional forms especially by factoring.

5. Ratio and proportion. (Simple treatment).

6. Radicals not including cube roots of polynomials.

7. Quadratic equations.

ADVANCED ALGEBRA.

Suggestion.

Most Montana High Schools are now devoting but one half year to this subject. In view of the genuine difficulties of the subject and of the constant complaints of the Colleges and Technical Schools of lack of adequate preparation in Algebra, this department recommends that an entire year be given to the advanced course. Most of the larger Universities and the stronger Technical Schools have now refused to accredit High School Algebra for admission to their engineering courses. Inasmuch as Algebra beyond the first year is taught almost solely for the benefit of students, seeking admission to such courses, it seems evident that the present arrangement

has not been a success. Schools that have tried the year course are enthusiastic in its favor.

Outline of Course.

Not to be regarded as a guide to order of presentation.

1. Thorough review of Elementary Algebra.
2. Highest Common Factor and Lowest Common Multiple.
3. Roots and exponents.
4. Simultaneous equations, both simple and quadratic, with special attention to solutions by factoring and by formula determinants.
5. Graphical representation of both simple and quadratic equations having two variables.
6. Ratio and proportion.
7. Progressions.
8. Logarithms.
9. Variations.
10. Limits and infinity.
11. Imaginaries with graphical interpretation.
12. Theory of quadratics.
13. Binomial theorem.

PLANE GEOMETRY.

Suggestions.

1. Geometry is not to be taught as a memory drill. Experimental psychology has proved it useless for this purpose. Neither is it taught because of any supposedly practical value existing in its applications. "All the facts that a skilled mechanic or an engineer would ever need could be taught in a few lessons." Its value consists almost solely in the opportunity it gives, through the simple and objective character of its subject matter for training in the processes and methods of logical reasoning and exact statement. For this reason fewer propositions thoroughly comprehended are preferable to a larger number imperfectly understood. Thoroughness, exactness, independence, are the measures of success in Geometry teaching. "Original" exercises should form an important part of the work. They are the best test of the student's progress. The amount of time to be devoted to them will, however, vary with the ability of the class and the skill of the teacher.

(See David Eugene Smith's, "The Teaching of Geometry.")

2. The movement to make Geometry more practical is to be approved wherever that movement tends to make it more interesting to the learner. However, this approval is solely for pedagogical reasons, not at all because of any idea that Geometry is going to be applied directly to the business of every day living.

3. About one-third of the time should be given to the propositions proved in the text-book, one-third to "original" exercise carefully written out and preserved in a note book, and one-third to experimental and construction work. For the last students should be provided with double ruled paper, protractors, compasses and straightedge.

SOLID GEOMETRY.

Most of the suggestions made for Plane Geometry apply to Solid. The work is sufficiently suggested by any one of a number of texts.

TRIGONOMETRY.

Its Place in the Curriculum.

1. Trigonometry is at present offered in only a few of our strongest High Schools. It is, of course, always an elective. Only students who expect to make special use of their mathematics should be allowed to take it.

2. It is questionable whether a course in Trigonometry has any place in the High School. In many cases a good course in Advanced Arithmetic would certainly be of much more value, leaving the Trigonometry for the college or technical school.

ADVANCED ARITHMETIC.

This course will find its chief usefulness in the case of seniors who desire to teach. The average High School graduate knows almost nothing about Arithmetic—not a surprising fact—and is very poorly prepared, even though by dint of cramming he may pass an examination, to present the subject to children. The High School course, therefore, should aim not only to furnish a thorough review of the subject, but should devote some attention to its pedagogy.

FOREIGN LANGUAGES.

Latin.

French.

German.

Greek.

General Suggestions.

1. Students should not be given credit for less than two years' work in a language. This rule is subject to a single exception. Some dental schools in the country are requiring one year of Latin for admission. In the case of students preparing for such schools, High Schools can scarcely refuse to credit one year's work.

2. If only four years of foreign language can be offered in a school it is probably best that it should be four years of Latin. It is believed that four years of a single language can be made more significant than two years each of two languages.

3. The main things to be gained from the study of any foreign language are better understanding, more thorough control and keener appreciation of one's own. Accordingly the teacher who allows the English idiom to suffer violence at the hands of juvenile translators is defeating the chief purpose of his work.

4. As the translation of a passage from a foreign language at sight is a very delicate and thorough test of a pupil's knowledge of the subject, the ability to do this should be cultivated most carefully and most thoroughly by the teacher. It depends upon the pupil's sure and exact knowledge of: (1) inflections, (2) vocabulary, (3) syntax. In exercises of this kind, therefore, the passages should be chosen with care as to subject, vocabulary and difficulty. Much reading of the original of the passage should be done before an attempt is made at translation. In reading, the pupil should be required to observe the composition of the words, their endings, and their probable relations as dependent both upon ending and position. Careful attention should be called to the structure of each sentence and to the relation of the clauses. The meanings of words which the pupil is not supposed to know should be given to him, or he may have at hand a vocabulary or dictionary for these. An exercise of this kind should be one of directing on the part of the teacher. Such hints and information should be given as are needed to prevent a waste of effort by the pupil. Independent work is always to be encouraged and

help given should be withdrawn gradually as the pupil's power grows.

LATIN.

Outline of Course.

First Year.

1. Emphasis upon inflection and derivation.
2. Acquisition of a working vocabulary of 400 or 500 words.
3. Absolute familiarity with regular forms and with common irregular forms and ordinary constructions.
4. Ceaseless drill is the price of success in first year Latin. Forms and construction must be repeated until their reaction becomes automatic.
5. Latin derivatives in English.

Second Year.

1. Translation of four books of Caesar de Bello Gallico or its equivalent in selections from Caesar and other Latin writers as given in any standard second year Latin book.
2. An informal study, chiefly by class discussions, of the internal history of Rome during the period, especially the events which make clear the rise of Caesar's power.
3. Roman military organization and the geography of the country covered by the campaigns studied should be given close attention.
4. One of the chief reasons for lack of interest in Caesar is that students do not gain a view of the story as a whole. Is there any piece of literature sufficiently fascinating to remain even mildly interesting if read as Caesar habitually is read in our schools?

Teachers should endeavor to make the story clear and logical by means of rapid reviews in English, outline maps, reading from English translations and commentators.

5. During this year the mastery of all ordinary Latin prose constructions should be completed.
6. Latin composition not less than one period per week.
7. This is the critical year in Latin. The teacher who can pilot his students successfully through it will keep them with him to the end.

Third Year.

1. Cicero—Orations in Catilinam I.—IV. Pro Lege Manilia and Pro A Licinio Archia Poeta.

2. The life and times of Cicero. Translation of some of Cicero's letters may well be read by the teacher. The student is certain to dislike Cicero's orations unless he feels Cicero's spirit.

3. Latin Prose Composition at least one period per week.

Fourth Year.

1. Vergil Aeneid Books I-VI.

2. Life and times of Vergil. Mythology and geography of the Aeneid Prosody of the dactylic hexameter.

3. Memorizing of choice lines.

4. Continued study of Latin prose composition based on Cicero and Caesar.

GREEK.

At the present time only two High Schools in the state offer Greek and neither is at present furnishing any instruction in the subject. Accordingly it seems hardly worth while to outline a course in that subject.

GERMAN.

General Suggestions.

1. The chief difference between the teaching of ancient and modern languages in the High School should be in the placing of the emphasis. The modern languages should be treated as living languages and should have the emphasis placed upon the training of ear and tongue.

2. Schools are urged to provide for not less than three years in German. If a student is to take the subject at all, he should, if possible, take enough of it to enable him to make practical use of it.

3. The common charge against modern language teaching in High School is that students do not learn to use the language, either oral or written, in a practical fashion. When one stops to consider that the modern language teacher has his students but forty minutes a day and that the rest of the twenty-four hours they are immersed in English, it is not strange that they do not acquire more than a very superficial acquaintance with the foreign language.

4. Many teachers have organized German clubs, meeting at times not conflicting with the school program, the proceedings

of which are conducted entirely in German and whose programs are of such a nature as to furnish a supplement to the work of the class room by stimulating interest in German life, institutions and history.

5. Very little English should be heard in a modern language class room. After the first few months it should disappear almost entirely. Pictures, maps and books in the class room should be German. The school should have a newspaper in German. The competent teacher will at once appreciate its value and possible uses. For Montana schools the Montana Staats-Zeitung published at Helena is recommended. An excellent little publication is "Aus Nah and Fern," 330 Webster Avenue, Chicago, 40c per annum, quarterly.

Outline of Course.

First Year.

Besides drill upon pronunciation, which should be mastered in this year and the elements of grammar comprising inflection of articles, nouns, adjectives, pronouns, weak verbs and ordinary strong verbs, the use of common prepositions with genitive, dative, accusative, and dative or accusative objects, the simpler uses of the modals, or ordinary rules of word order and syntax, several short poems should be memorized and about 100 pages of easy reading covered. The poems and texts mentioned below are suggestive of the kind of work intended.

Poems for memorizing: Die Lorelei, Heidenroeslein, Das Zerbrochene Ringlein, or others of similar length and character.

Texts for reading—

Anderson.....	Bilderbuch ohne Bilder.
Benedix.....	Eigensinn.
Biblische.....	Geschichten.
Campe.....	Robinson der Juengere.
Frommel.....	Eingeschnitten mit Ranzel und Wanderstab.
Grimm.....	Kinder und Hausmarchen, viz, Rotkappchen, Rot- roeslein, Schneewittchen, Haensel and Graetel, Aschenputtel.
Stokl.....	Under den Christbaum.
Meissner.....	Aus meiner Welt. Aus meinen Lande. Wilkommen in Deutschland. Im Vaterland. Gluck Auf.

Second Year—

Baumbach.....	Der Schwiegersohn.
Chamisso.....	Peter Schlemihl.
Ebner-Eschnerbach.	Dottie, die Uhrmacherin.
Frenssen.....	Jorn Uhl (Selections).
Freytag.....	Die Journalisten. Soll und Haben.
Goethe.....	Hermann and Dorothea. Dichtung und Wharheit (Selections).
Hauff.....	Lichtenstein.
Heine.....	Die Harzreise.
Hoffman.....	Meister Martin der Kufner.
Lessing.....	Minna von Barnheim.
Lillienkron.....	Anno 1870.
Luauwig.....	Zwischen Himmel and Erde.
Moltke.....	Die beiden Freunde.
Morike.....	Mozart auf der Reise nach Prag.
Moser.....	Der Bibliothekar.
Riehl.....	Das Spielmannskind. Der Fluch der Schoenheit. Der stumme Ratsherr.
Scaeffel.....	Der Trompeter von Sakkingen.
Schiller.....	Die Jungfrau von Orleans. Wilhelm Tell.

The third year's work in German anticipates at its end the ability to read at sight German prose or poetry of ordinary difficulty and to carry on a simple conversation in German.

About 400 pages of somewhat difficult prose should be read, along with continued drill in conversation, composition and the more difficult or unusual grammatical rules. Infinitives and subjunctives will need particular attention.

For memorizing—choice selections from text read, as for example the songs in the opening scene of Tell.

1. Grammatical drill continued. Complete study of modals, prepositions, strong verbs and word order.

2. German composition at least one hour per week.

3. Conversation, drill on colloquial phrases, songs. Reading and discussion of German periodicals.

4. Memorizing of poems and proverbs.

5. Translation of about 200 pages of easy German stories, poems and plays.

It is probably desirable to make this work as varied as possible without endangering the student's interest in the subject matter.

Poems for memorizing: Erlkonig, Die Wacht am Rhein, die Grenadiere, or others of similar length and character.

For Reading—

Arnold.....	Fritz auf Ferien.
Baumbach.....	Im Zwielficht. Waldnovellen.
Ebner-Eschenbach...	Krambambuli.
Elchendorff.....	Aus dem Leben Eines Taugenichts.
Gerstacker.....	Germelnausen. Irrfahrten.
Hauff.....	Das kalte Herz. Die Karawane.
Hillern.....	Hoher als die Kirche.
Leander.....	Kleine Geschichten. Traumereien.
Meissner.....	Aus Deutschen Landen.
Moser und Heiden..	Kopnickerstrasse 120.
Muller.....	In Wartesalon erster Klasse.
Rieth.....	Burg Neideck. Die vierzehn Nothelfer.
Rosegger.....	Waldeinmat.
Schiller.....	Der Neffe als Onkle.
Seidel.....	Der Lindenbaum. Die Monate. Herr Omnia. Leberrecht Hunchen.
Storm.....	Geschichten aus der Tonne. St. Jorgen. Immensee.
Waldseebruch.....	Das edle Blut. Der Letzte.
Wilhelmi.....	Einer muss Heiraten.
Zschokke.....	Der Zerbrochene Krug. Das Abenteuer der Neujahrsnacht.

FRENCH.

1. In general only the larger schools should attempt to offer both French and German. It is better to give three or four years of one of these languages than two years of each.

2. The work for each year will not differ essentially from the plan laid down for German, pronunciation, spelling and idiomatic phrases, will require particular attention. Writing French from dictation is a valuable drill.

About 150 pages of easy prose should be read the first year and about 250 the second. The following books are suggested as suitable.

About.....	Petites Histories.
bruno.....	Le Tour de la France.
Bedolliere.....	Lamere Michel et son Chet.
Chateaubriand.....	Les Aventures du demier Abencerage.
Daudet.....	Le petit chose.
Erchmann.....	Chatrain, Madame Therese. Waterloo, Le con- script de 1813, etc. Foa Coutes biographique, Le petit Robinson de Paris.
Foucin.....	Lepays de France.
Labiche & Martin.....	Le poudre aux yeux, Levoyage de M. Periclos.
Legonve & Labiche....	Lacigale chez les fourmis.

Malot.....	Sous famille.
Mairet.....	La clef d' or L' enfant de la lime.
Meilhac & Halevy.....	L'ete de la St. Martin.
Merinne & Colomba....	Moliere & Le Malade Imaginaire (Modernized and expurgated editions may now be obtained.)
Nodica.....	Lachien de Brisquet.
Renard.....	Trois Coutes de Noel.
Sand.....	Lamare Audiable.
Verne.....	(Selected Stories.)

At the end of the second year the pupil should be able to pronounce French correctly, to read at sight easy French prose, to put into French simple English sentences taken from every day life, and to answer questions on the rudiments of the grammar.

Third Year.

The third year's work in French is thus outlined in the New York Syllabus.

1. The reading of from 350 to 500 pages of French of ordinary difficulty, a portion of which should be in the dramatic form.
2. Constant practice in giving paraphrases, abstracts or reproductions from memory of selected portions of the matter read.
3. The mastery of a grammar of moderate completeness.
4. Writing from dictation.

Texts for Reading and Study.

Augier.....	Sandean. Legendre de M. Poirier.
Brete.....	Mon oncle et mon cure.
Laurie.....	Memories d'un collegien.
Racine.....	Esther.
About.....	Lamere de la marquise.
Beranger.....	(Selected poems.)
Coppee.....	(Selected poems.)
Daudet.....	LaBelle Nivernaise, Tartarin de Tarascon.
Dumas.....	La Tulipe noire, Monte Cristo, Les trois mousquetaires.
Hugo.....	Hernani, La Chute.
Labiche & Delacour..	La Cagnotte.
Loti.....	Pecheur d' Islande.
Michelet.....	Extracts.
Moliere.....	L'avare, Le bourgeois gentilhomme.
Sand.....	Lapetite Fadette.
Sandean.....	Mademoiselle de la Seigliere.
Sarcey.....	Le siege de Paris.
Scribe.....	(Plays.)
Vigny.....	Lacanne de jone.
Mme de Sevigne...	(Selected letters.)

ECONOMICS.

Suggestions.

1. In an age when the questions of government are so largely economic in character it seems certain that the High Schools ought to offer some instruction in the principles of economics and their application to our institutions. The course in American History should partially supply this need but cannot be expected to do so adequately.

2. The range of experience of the average High School student is not such as to warrant the teacher in expecting from him any mastery of economic theory. The important thing for the teacher to remember is that he is not training specialists but citizens; that economic theories are not universal truths but are continually modified by conditions. Hence High School courses in Economics should deal with the here and the now. Everything should be tested by application to local conditions.

3. A good library is very essential and a list of valuable books is appended. Much use should be made of newspapers, commercial and trade journals, publications of Department of Commerce and Labor, Interstate Commerce Commission and State Bureau of Agriculture, Labor and Industry.

- Adams..... The Science of Finance. (Holt)
Adams & Summer..Labor Problems. (Macmillan)
Bastable.....Theory of International Trade. (Macmillan)
Boarg..... Economic History of the U. S. (Longmans)
Bucher..... Industrial Evolution. (Holt)
Bullock.....Selected Readings in Economics. (Ginn)
Burton..... Crisis and Depressions. (Appleton)
Cheney.....English Industrial History. (Macmillan)
Clare.....The A. B. C. of Foreign Exchange. (Macmillan)
Clark.....Essentials of Economic Theory. (Macmillan)
Commons.....Trade Unionism and Labor Problems. (Ginn)
Cossa..... History of Economics. (Macmillan)
Day.....History of Commerce. (Longmans)
Dewey.....The Financial History of the U. S. (Longmans)
George..... Progress and Poverty. (McClure)
Greene..... Corporation Finance. (Putnam)
Hobson.....The Evolution of Modern Capitalism. (Scribner)
Jenks.....The Trust Problem. (McClure)
Jevons..... Money and the Mechanism of Exchange. (Appleton)
Johnson..... American Railway Transportation. (Appleton)
.....Ocean and Inland Water Transportation.
.....Money and Currency. (Ginn)
Marshall..... Principles of Economics. (Macmillan)

- Meade.....Trust Finance. (Appleton)
 Mitchell.....Organized Labor. (American Book Company)
 Patten.....The Economic Basis of Protection. (Lippincott)
 Rae.....Contemporary Socialism. (Scribner)
 Report of the United States Bureau of Labor on
 Labor Laws in the United States, Department of
 Labor.
 Ripley.....Railway Problems. (Ginn)
 Trusts, Pools and Corporations.
 Seager.....Introduction to Economics. (Holt)
 Seligman.....Principles of Economics. (Longmans)
 Semple.....American History and Its Geographical Conditions.
 (Houghton)
 Smart.....Introduction to the Theory of Value. (Macmillan)
 Stanwood.....American Tariff Controversies of the 19th Century.
 (Houghton)
 Taussig.....Tariff History of the United States. (Putnam)
 Townsend-Warner.. Landmarks in English Industrial History. (Mac-
 millan)
 Webb.....Industrial Democracy. (Longmans)
 White.....Money and Banking. (Ginn)
 Willoughby.....Workingmen's Insurance. (Macmillan)
 Wright.....Outlines of Practical Sociology. (Longmans)

BOOKKEEPING.

First Year.

The first year's work in bookkeeping should be so arranged as to furnish a solid foundation for the more advanced work of the second year and at the same time be complete in itself so that students who are obliged to leave school at the end of it may be able to keep a simple set of books. The following statement of the contents of the course is compiled from the suggestions of several of the best commercial teachers in the state.

1. A drill in the theory of debits and credits.
2. Journal entire; ledger accounts.
3. Trial balance; financial and loss and gain statements.
4. Closing ledgers.
5. Sales book, cash book, purchase book, day book, journal etc.
6. Special column books.
7. Practical bookkeeping in retail business.

Suggestions.

1. Avoid "learning by rote" by using simple mimeographed

exercises, starting with a few transactions involving only cash and merchandise. Let each new exercise introduce a new term or principle and also review the ones that have been given. After cash and merchandise, take up in turn expense, proprietor's account, personal accounts, bills receivable, bills payable, and the allowance accounts. When all the principles and terms which will appear in the first text book set have been thoroughly taught, give the pupil his text book and let him proceed until some new principle is reached. By similar exercises present each new principle as it comes up in the work. Aim to secure independent thinking on the part of the pupil. Develop reasons for each step and discourage memory effort.

2. Give frequent oral drills on points covered. This will give the pupil a readiness and dispatch in the execution of his work which can scarcely be acquired in any other way and which is indispensable to the pupil when he is called upon to write an examination within a reasonable time limit. Remember that drill, both oral and written, will aid, rather than retard the pupil's progress in the end.

3. Emphasis should be placed on the necessity for the rapid execution of the work of recording entries, making out business papers, etc., when they are thoroughly understood.

4. Impress upon the student the fact that it is the man who can execute rapidly who is in demand and that in this subject he is given an opportunity to acquire this highly prized ability.

5. Frequent short review sets should be given and a proper time limit should be set on some of them so that the pupil will be able to do his best work on an examination where a definite time is stated.

6. Give frequent reviews in making the business statements using trial balances or ledgers mimeographed and furnished to the pupil.

7. Drill on closing the ledger in order that both accuracy and dispatch may be acquired.

8. Ruling exercises should be given. These may include single and double red lines, and the forms of the various books used in the course.

9. Additional drill should be given in each arithmetical

problem which the student encounters in his bookkeeping work.

10. Exercises to be done at home should be given students in this subject. Much additional drill can be secured in this way.

11. Do not permit pupils to copy their work in their blanks. Require original work.

12. Drill in correcting errors is quite as essential as any other lesson in bookkeeping.

13. Emphasize the importance of clear, complete, and concise explanatory statements in connection with each original entry. This test should be continually applied; "Would a stranger understand from your record just what has taken place?"

14. The distinction between "interest and discount" and "merchandise discount" should be thoroughly explained.

15. When the business practice begins have all bank pass books properly kept and written up. This work may be done either by the teacher or by pupils selected by the teacher, but in no case should each pupil write up his own pass book.

16. Even though terms which are not used in the business world are used in the school room for pedagogic reasons, it is necessary that the terms used by business men and accountants should be thoroughly understood. For instance, in nearly all books, "loss and gain" is used for "profit and loss," and "resources and liabilities" for "assets and liabilities." Such apparent differences should be thoroughly understood by the pupil not merely because they may be used on examination, but because he will surely hear them used by business men.

17. Methods of proving posting and locating errors in the trial balance should receive considerable attention, as errors in posting and consequent difficulty with the trial balance use up a large amount of the pupil's time. Insist on the use of some kind of a check mark when reviewing posting.

18. Folio numbers should be used in all posting. Insistence on this point will save the pupil much time.

19. Insist on neatness and the best penmanship of which the pupil is capable in all bookkeeping work.

Second Year.

The second year's work of course, is a continuation of the principles and fundamentals of the science which have been learned during the first year of the course. The work of the second year may be composed of whatever the teacher may think best. Special budgets are prepared for the various phases of advanced work. For example, the student should work at a set of mercantile (wholesale business); this line of work is well adapted to teaching the new and up-to-date methods in which the various special new books are used—the new voucher system. A mercantile lumber set would be a splendid set also to use in the second year's work; and then perhaps a corporation set ought to follow next, using vouchers and newest up-to-date methods of corporation bookkeeping. Then a banking set might well be placed in the course, perhaps for finishing off work. A great many of the best bookkeeping teachers in the country, however, think that banking is non-essential and many business college proprietors will tell you that they teach banking and have their room fitted up with nice bank fixtures simply as an advertisement to draw students. After a student has completed a course in bookkeeping, if he should be called upon to work in a bank, he would very soon become acquainted with the special kinds of books which they use.

Suggestions.

1. No pupil should be permitted to take this course who has not successfully completed the work of the first year.
2. No particular special sets are required but as many should be used as seem necessary to properly present the principles of advanced bookkeeping mentioned above.
3. Do not have a large number of sets written up at the expense of thoroughness. One set of books which will illustrate the necessary principles of modern bookkeeping with considerable drill on these principles by means of short class exercises is far better than several sets with no opportunity for such valuable drill.
4. In this part of the course all business practice, except such as is peculiar to the business and books which are being used as the basis of the instruction may be dispensed with to give a greater opportunity for theoretical work on advanced principles.

5. Bookkeeping problems such as opening entries where a business is being started by an individual, a partnership, or a corporation with assets and liabilities, should be given as class exercises until the pupil has a thorough understanding of such entries.

6. Special exercises should be given showing the relation between the main and the auxiliary ledgers.

7. Pupils should be taught how to make abstracts of the auxiliary ledgers. This will tend to show how these ledgers are related to the other books in the set.

8. Teachers are urged to eliminate some part of their text, if necessary, to get the proper time for class drill on important points. To "understand" the work is not enough; to be able to retain and apply the principles learned is indispensable.

PENMANSHIP.

1. One well known educational authority has recently stated that he would graduate no student from the High School who could not write a clear, legible hand. Probably this is an extreme statement, but it is nevertheless exceedingly desirable that the High School turn out good penmen. What a world of time and patience would be saved to High School teachers alone if their pupils all wrote clear, legible hands. Business men judge applicants very largely by their handwriting.

2. It is impossible to lay down exact requirements in penmanship. Some pupils who enter the High School will need no further instruction; some will need much. Where it is in any way possible, pupils whether in the commercial course or not, whose penmanship is notably deficient, should be required to take the subject until there is reasonable improvement. The test of this improvement should be not the work done in the penmanship class, but the ordinary written work of the pupil in the other subjects.

3. The following suggestions as to the teaching of the subject are given by one of the successful penmanship teachers of the state.

Methods.

Begin each lesson with a few minutes of movement work. Have each lesson consist of some review and some new work.

For the new work—Letter should be developed carefully by the teacher, from the board. Appropriate rhythmic count should be given to develop muscular control.

Words involving use of letter from copy on board. Words from dictation. Sentences in which letter is used; from board, then from dictation.

Practice Outside of Class.

From 15 to 30 minutes daily, first from copy and later from text book in English History, or other sources. Also, all written work in other subjects should be written with close attention to form and movement.

Special Methods.

Palmer or Zaner system combined with suggestions from good Penmanship Journals.

SHORTHAND AND TYPEWRITING.

In a strong commercial course there will be two years' work in this subject probably in the eleventh and twelfth grades. The connection between the courses will not be so intimate in the first year as in the second. In the second year the typewriting will be practically laboratory work in short hand.

General Suggestions.

In spite of great variety of systems in use a few suggestions applicable to all may be made.

1. The use of good English is the first requirement for the course. A student seriously deficient in English will be an everlasting source of annoyance to his employers and of little profit to himself.
2. Thoroughness and accuracy are first to be sought. Speed will come naturally with practice.
3. Matter dictated or used as copy should be carefully selected. Pupils may thus without additional effort acquire useful information. Avoid monotony.
4. Have short reviews daily.
5. Ready reading of shorthand notes is just as essential as their writing.
6. There is but one method of scientific typewriting, the "touch system." This cannot be "picked up" by the pupil by turning him loose with a machine. It must be carefully taught according to well established principles. Many devices for

concealing the keys from the operator are on the market. The one manufactured by the Chrisman Publishing Company of St. Louis is particularly good.

7. Students should learn in a general way the mechanism of several standard machines with the principal types of key-boards and should become masters of one.

8. As the fundamental principle of touch typewriting is habit it is of the utmost importance that right methods be employed from the start and that the fewest possible deviations from them occur. For this reason there must be in the first month constant supervision of the work.

9. The typewriting course should include training in carbon work, filing and indexing, legal forms, invoicing, stencil and card work.

10. In the development of speed one letter copied many times is much more effective than several letters copied once. This is true both in short hand and in typewriting.

11. At the end of the first year the pupil should be able to take ordinary business dictation at the rate of fifty words per minute and to copy unfamiliar material on the typewriter at a speed of thirty words a minute.

12. At the end of the second year the student should be able to do perfect work; there should be no errors due to faulty handling of the machine. He should be able to take dictation at the rate of 100 to 120 words per minute and to transcribe his notes on the typewriter at the rate of thirty five words per minute.

COMMERCIAL GEOGRAPHY.

General Suggestions.

1. This subject has suffered for want of a satisfactory textbook. Such books are now, however, appearing. Teachers have ordinarily regarded the subject as a sort of incidental and have not made it the subject of special study. With the advent of good books teachers should now change this attitude toward this subject and give it the consideration it demands.

2. "What," "how much," and "where" are not the important questions, but rather "why." The study should not be statistical but topical. No one can long carry statistical tables in his head, and it is not desirable that he should, but he can remem-

ber the great underlying principles which govern the distribution of the world's commerce and the localization of its industry.

3. Aid from government publications. Consular reports.

4. Pupils should never be allowed to forget the relation of their locality to conditions and productions elsewhere in the world.

BUSINESS ENGLISH.

1. If the High School is to turn out really competent stenographers there must be a special course in business English. It will not be profitable, however, for any but the larger schools to undertake such a course. It should come in the eleventh or twelfth grade.

2. Much training in advertising may be combined with such a course.

3. Letter writing as applied to salesmanship. Every letter should have sale as its purpose, direct or indirect. Eighty-five per cent of the business done in the United States is said to be done by means of the personal letter.

4. Study of the business letter. Show the fundamentals of the letter, how it goes through the same process as the science of salesmanship; how it is necessary to gain attention in the first paragraph; to arouse interest; to create a desire for the thing you are trying to sell; to give additional argument if need be; to use persuasive reasoning; and finally to close the letter by a strong inducement to immediate action. These are the fundamentals of every letter. Show how they may not be in the same order every time—but they are there in some order. It is comparatively easy to secure from the local merchants a few dozen or hundred letters for class use, for the purpose of illustration and first hand study. This kind of work will arouse a keener interest in letter writing than any other thing could do.

5. Mechanical make-up. Give special attention to details, margins, outlines, paragraphing, opening and closing, folding, addressing envelopes, kind and quality of paper—and illustrate how each of these has an advertising value for the firm. Illustrate the preparation, keying, mailing and checking up of circular follow-up letters. Illustrate the mimeograph letter

and show its value—illustrate the circular letter. Show the value of booklists, brochures, circulars, and advertising to be sent in connection with letters, either as enclosures, or under separate cover.

6. The letter of application. This should receive special attention because it is the kind of letter that every man and woman who enters business life will need to know how to write some time or other. Illustrate letters of complaint and collection letters; illustrate letters ordering merchandise; letters asking for freight or transportation of any kind. Social correspondence has no place in a study of this kind.

7. Office routine. Study the care of correspondence, its receipt, stamping, answering, duplicate copies, general office practice among stenographers. Illustrate filing. It is well to call attention to file devoted to a small business and also to the numerical file that would care for the business of the largest concerns.

8. How to acquire a good working vocabulary. It is impossible for one to write a clear-cut, vigorous, aggressive, sales letter unless he has a very complete working vocabulary. To acquire this working vocabulary one needs to be a good speller; and if the students are not good spellers the subject should be taken up as a part and parcel of the work in Commercial English. Show how one may increase his working vocabulary (1) by reading at least one of the daily newspapers regularly and faithfully—read the editorials; (2) a close study of at least five standard magazines of the country; (3) the habit of marking every word whose meaning is not clear and after finishing the article of referring to the dictionary for its meaning; (4) by close study of the advertising of the metropolitan stores.

COMMERCIAL LAW.

1. Commercial law should aim to give the student a knowledge of the theory of the law and of its application to simple cases that are of ordinary occurrence in actual business life. It may well include the following topics: Origin of common law, statute law, the theory of property; contracts including parties, consideration, subject matter, legal and illegal, remedies, defenses, etc. The statute of frauds, negotiable instru-

ments, notes, drafts, checks, indorsement, etc., guarantee and surety, real and personal property, bailments, etc., agency, partnership, corporation, joint-stock companies, insurance, real-estate, landlord and tenant, etc.

2. Numerous practical hypothecal problems should be given for the student to work out according to law.

3. The assignment of the following day's lesson, of sufficient importance in all subjects, is of particular importance in this. A little time spent on the vocabulary of the next lesson, the important points, suggestions as to their application, will bring good returns.

4. The reference library should have the codes of the state and a case book on each subject mentioned in the text. The instructor must be well informed, a wide reader and should cultivate the acquaintance of a good lawyer, who may be appealed to occasionally.

COMMERCIAL ARITHMETIC.

General Suggestions.

1. Only methods approved by the best business usage should be employed. For this reason the teacher should keep in touch with the actual business world.

2. Absolute accuracy must be insisted upon and whatever speed the pupil can acquire.

3. Fractions should be handled with reference mainly to two considerations. (1) Aliquot parts and (2) such fractions as are possible when handling weights and measures.

4. Denominate numbers should deal only with units in actual use.

5. Rapid calculation, both oral and written, should form a part of every day's work.

6. Problems secured from local business men, merchants, contractors, lumbermen, bankers, etc., are better than book problems.

7. Books without answers are to be preferred. Teach pupils to check their results and know when they are correct.

8. The more the course can be kept outside the book the better.

9. A few commonly used "shortcuts" should be taught.

10. Commercial teachers are unanimously of the opinion

that this course should be given a full year instead of the half-year, now commonly allotted to it. It is difficult not to admit the force of these arguments. When schools see fit to devote an entire year to this subject the following subjects may be mentioned as demanding consideration:

Aliquot parts, decimals, fractions, bills and accounts, measurements, plastering, painting, carpeting, papering, solids, wood measure, lumber measure, stone work, brick work, capacity of bins, cisterns, etc., percentage, commercial discounts, loss and gains, resources and liability statements, marking goods, commission and brokerage, fire insurance, state and local taxes, customs, interest sinking funds, bank discounts, partial payments, banker's daily balance, savings bank accounts, domestic and foreign exchange, dividends and investments, stocks and bonds, life insurance, partitive proportion and partnership, storage, equation of accounts, etc.

MECHANICAL DRAWING.

Two 90 minute periods per week in connection with Manual Training.

1. This course should follow closely the shop work in Manual Training. In fact the two should be practically one course.

2. The outline below is that followed in one of the larger high schools of the state and is offered here as a suggestion of what the course should cover.

Suggestions for drawing course.

First Year—Plates 1 to 20, working drawings of shop exercises, furniture designs, and simple machine parts, drawn from orthographic or perspective sketches; plates 1a to 6a, geometrical problems; plates 7a to 12a, free-hand lettering, (these should not be made in succession); plates 21 to 25, theory of projections; plate 26, conic sections; plate 27 and 28, intersections and developments; plates 29 to 35, freehand perspectives and sign designs.

Second Year—A continuation of the freehand work in drawing from the object, book cover and wall designs, isometric and cabinet projections of machine parts drawn from copies. Sketches and objects.

Third Year—Machine design including gears and cams; mechanical perspective; architectural drawing.

Fourth Year—Sheet metal patterns; strength of materials; topographic drawing, or Architectural Drawing and Machine Design continued.

MANUAL TRAINING.

Three 90-minute periods per week of shop work.

1. Manual Training should be to a great extent a local subject. The outline of the course here given is taken from the High School Manual of the State of Washington. Conditions in that state are not unlike conditions in Montana and the course outlined for the use of Washington High Schools is in close harmony with the many excellent suggestions that have been received from Manual Training teachers in this state.

2. The list of equipment is that given in the N. Y. State Syllabus for Secondary Schools. Montana prices would be somewhat higher.

Individual Tools and Benches for Twenty Students.

20 benches, joinery 4 foot with iron vise.....	\$200.00
20 bench dusters, 9 inches.....	4.50
20 bench hooks, made by the boys.....	
20 brad awls, 1½ inch handles.....	.89
20 chisels, 1 inch tang firmer.....	6.09
20 chisels, ½ inch tang firmer.....	4.46
20 gauges, marking No. 64.....	2.49
20 knives, sloyd 2½ inch blade	5.41
20 mallets, hickory 2½ inch face.....	2.71
20 nail sets, knurled round.....	1.67
20 planes, jack 2 inch cutter.....	39.60
20 rulers, single fold, 24 inch No. 18.....	3.00
20 planes, block 91½x1¾ cutter.....	14.40
20 saws, back 10 inch	18.60
20 try-squares, 60 inch No. 5½.....	4.21

General Tools for Tool Room.

3 bevels, sliding T 6 inch No. 2.....	.63
3 bits, sets dowel, 3-16 inch to 15-32 inch.....	7.62
4 braces, bit 8 inch sweep.....	3.72
10 chisels, socket firmer, two each ⅛ inch, ¼ inch, ⅜ inch, ¾ inch, 1½ inch.....	3.60
4 clamps, steel bar, to open 24 inches.....	3.80
3 clamps, steel bar, to open 36 inches.....	3.60
3 clamps, steel bar, to open 48 inches.....	4.20
3 counter sinks, Rose ⅝ inch.....	.69
4 dividers, wing 6 inch.....	.68
8 gouges, tang outside firmer, two each, ¼ inch, ⅜ inch, ½ inch, ¾ inch.....	2.60

6 hammers, bell-faced, 13 ounce.....	2.65
12 hand screws, 14 inches.....	5.85
12 hand screws, 16 inches.....	6.88
3 oilstones, No. 2 India combination, coarse and medium.....	1.26
2 oilstones, medium, Lily white; washite 8"x2"x1".....	1.44
2 planes, smoothing, 1¾ inch cutter.....	3.16
1 saw, crosscutting, 24 inch 7 pts.....	1.45
4 saws, crosscutting, 22 inch 9 pts.....	5.40
3 saws, rip 22 inch 6 pts.....	4.05

If no power saw table is installed, for cutting up stock, a crosscutting hand saw and a rip saw should be provided for about every three pupils.

6 scrapers, cabinet hand 3"x5".....	.30
3 screw drivers, perfect handle 7 inch.....	1.89
4 spoke shaves, No. 53.....	1.12
2 steel squares, carpenters 18"x24".....	1.44

The following group of tools should remain practically the same even if the number of pupils is more or less than 20.

1 figure set 3-16 inch for wood.....	1.05
3 files, cabinet 8 inch.....	.90
3 files, cabinet 10 inch.....	1.14
1 gage, panel No. 85.....	.17
1 file brush No. 2.....	.24
2 gages, mortise No. 47.....	1.08
1 gouge, ⅜ inch tang outside firmer.....	.27
1 gouge, 1 inch tang outside firmer.....	.43
1 gouge, 1½ inch tang outside firmer.....	.68
1 gouge, ¾ inch tang outside firmer.....	.33
1 gouge, ½ inch tang outside firmer.....	.37
1 hammer, bell-faced 16 ounce.....	.57
6 hand screws, 9½ inch.....	3.50
6 hand screws, 14 inch.....	4.32
1 miter box, No. 33.....	9.77
2 oilers, copper, 1-3 pt.....	.28
3 oil stones, slips Arkansas 3½x1½.....	.36
1 plane, plow No. 45.....	5.85
2 planes, rabbeting No. 78.....	2.20
2 planes, tonguing and grooving, No. 48.....	3.66
1 plane, gage, No. 333.....	1.05
1 plane, scraper, with extra toothing cutter.....	1.65
1 plane, router, No. 71½.....	1.10
2 planes, fore 18 inch, No. 606.....	4.76
1 plane, jointer, 24 inch, No. 608.....	3.40
1 plier, combination side cutting, 7 inches.....	.78
1 saw, turning wooden frame 18 inches.....	.90
2 rasps, wood, 10 inch.....	.76
1 saw, compass, 16 inch.....	.33
1 saw, pad keyhole.....	.18
1 saw set	.8~

1 scraper, veneer, No. 80.....	.70
1 screw driver, perfect handle, 12 inch.....	.65
2 screw drivers, clock 3 inch.....	.48
1 vise, picture frame.....	4.05
1 vise, saw-filing, 10 inch.....	.80
1 power grind stone, No. 10-A, 2½x24.....	15.00
1 cabinet maker's bench, medium (without drawers).....	12.00
1 circular saw table.....	80.00
1 10 horse power motor.....	175.00

MANUAL TRAINING.

General Suggestions.

1. It must be borne in mind that, owing to the fact that industrial education is in an experimental state, it is impossible to lay down a rigid outline. In fact, the State Department believes that the widest latitude should be given to instructors to apply their own individuality in giving this course, so as to make it adapted to the needs of each particular class.

2. Manual training should deal with complete processes and objects. The aim should be to enable the pupils to acquire skill gradually, through constantly making objects that are useful. For this reason we do not favor the introduction of set courses of models. A pupil might just as well learn to pronounce and define all of the words in the language before using them in sentences as to master the making of a set of joints and exercises before he attempts to apply them to the making of useful objects. The fact that a botched joint may spoil a whole piece of furniture is in itself educative in the highest degree.

3. The following aims and purpose of manual training should be kept in mind:

- (a) The development of "industrial intelligence."
- (b) The acquisition of sense of responsibility toward the work in hand and of pleasure in doing it.
- (c) The growth of a self-reliant spirit through acquired ability to do something worth while.
- (d) An appreciation of the dignity of labor.
- (e) Acquired judgment to be applied in selecting a future trade through a right attitude toward industry.
- (f) Some idea of the relative value of labor and material in finished products.
- (g) An appreciation of the value of skill and intelligence in labor.

4. The course in manual training should not be uniform for

all schools. It should be modified so as to be in keeping with the industries of the neighborhood, and the probable needs of the pupils. In many respects, courses designed for city and country schools may differ widely. Each should lead, through its immediate environment, out to industrial efficiency. The number of pieces of work that may be performed is practically unlimited, and the ingenuity and personality of the instructor are appealed to in order that the most practical course may be offered in any given case.

5. It is recommended very strongly, that if possible the course should include a half-year of industrial history, designed for pupils in agriculture and domestic economy. The course in economics outlined elsewhere in the manual may well be modified toward this end.

6. Much emphasis should be laid on the study of the source of power—steam, electricity, etc. In this respect the work may well correlate with physics in the study of mechanics. A study of the development, transmission, and application of power, in so far as available equipment and the capacity of the pupils will permit, is desirable.

7. The instructor should encourage the use of simple equipment, and the development of "Shop spirit" pride among the boys; school citizenship with all that it implies. Manual training if well taught, can be made a most fruitful means of the symmetrical development of the boy's personality.

SHOP WORK IN MANUAL TRAINING.

Ninth Grade. First Semester.

Recommended Minimum Course.

1. The work of this semester should cover first, work involving the application of the elementary exercises and joints, in order to familiarize pupils with the use of tools and materials, and later the problems of assembling.

2. Principles and processes to be taught. How to plan and lay out work; the use and care of bench, tools, and such supplies as sandpaper, glue, oil, paints, etc.; gluing, planing, thin pieces; chamfering, making a dado joint; the setting of hinges; the use of the gauge; finishing wood with wax, oil, or shellac; French polish.

3. Suggested exercises. One involving the use of the plane.

saw and chisel; the making of a half-lap joint; the making of a teapot stand, glove or handkerchief box, or inkstand.

Correlated and Supplementary Work.

Instruction in the development, manufacture and care of bench tools; points to be remembered in purchasing tools; the history and manufacture of glue, shellac, nails, screws, sand-paper, varnish, stains, etc.

Ninth Grade. Second Semester.

Recommended Minimum Course.

1. The work of this semester involves problems of simple carpentry, and general construction.
2. Principles and processes to be taught. The use of the framing square; group work; hopper, miter and mortise and tenon joints; the making of a miter box; thin gluing, thread cutting and varnishing; the construction of a panel.
3. Suggested exercises. House framing; the building of a model house to scale, frame complete, with floor laid and cornices and door and window frames made and fitted; the making the square, hand clamp, knife tray, foot stool, etc.

Correlated and Supplementary Work.

1. The study of the framing square; such problems of house construction as plumbing, heating, ventilating, city building, codes, etc.
2. Shop and factory methods; jigs.
3. Lumbering; forestry; milling; grading, inspecting and measuring of lumber.

Tenth Grade. First Semester.

Recommended Minimum Course.

1. Attention should be paid in this semester's work to problems of wood turning, spindle work, face plate and chuck work.
2. Principles and processes to be taught. The care and use of lathe and tools; lathe finishing, and polishing, accurate turning and fitting; built-up work.
3. Suggested exercises. The making of straight, step and taper cylinders; parting; grooves; beads and compound curves; the making of such objects as file handle, mallet, rolling pin, cups, bowls, card trays, covered boxes, towel ring and spheres.

Correlated and Supplementary Work.

1. The history, construction and principles of operation of the lathe.
2. Problems of power transmission; the conservation of energy; speed determination; belts and belting.
3. Commercial application of turning; factory method; automatic machinery; wood-turning machinery.

PATTERN MAKING.

Tenth Grade. First Semester.

Recommended Minimum Course.

Note.—This course may be substituted for the one outlined above for the first semester of the tenth grade, at the option of the instructor. It is left with the instructor and principal of the high school to determine whether, in view of the circumstances and surroundings, it is wise to give the course in pattern making or that outlined above, to be guided by their own best judgment.

1. Principles and processes to be taught. Draft; shrinkage; finishing strips and cores; parting; filets.
2. Suggested exercises. Solid patterns, including face plate, hexagon nut and bracket, split pattern, including pipe fitting and lathe crank; dry sand core work; pipe fitting; green sand core work; including the making of a wrench, pulley, etc.

Correlated and Supplementary Work.

1. The study of larger problems of moulding in all branches.
2. Metallurgy, and casting of iron, brass and steel.
3. Study foundry work, including supplies, tools and materials.

Tenth Grade. Second Semester.

Recommended Minimum Course.

1. In this semester instruction should be given in problems of cabinet work.
2. Principles and processes to be taught; steaming, bending, modeling, and inlaying; the making and use of the dovetailed joint; stair building; furniture work; varnishing, piano finish.
3. Suggested exercises. Hand mirror, embroidery hoops; inlaid blotter pad; inlaid jewel box; tool chest; dovetailed joints. Such problems of larger cabinet work, as stair building and the making of a piece of furniture.

Correlated and Supplementary Work.

1. The history, manufacture, and use of glass, including cutting, grinding, polishing, moulding, blowing, etc.
2. Problems of constructive design.

Eleventh Grade. First Semester.

Recommended Minimum Course.

1. The work of this semester covers bench work in iron and steel.
2. Principles and processes to be taught. Chipping, filing, polishing, drilling, tapping, fitting, riveting, scraping.
3. Suggested exercises. The straight edge, chipping block, center punch, nail set, surface plate, calipers, surface guage.

Correlated and Supplementary Work.

1. Metallurgy, iron and steel.
2. History and manufacture of supplies, such as files, carborundum, waste, oil drills, etc.

ART METAL WORK.

Eleventh Grade Second Semester.

Recommended Minimum Course.

1. Principles and processes to be taught. Piercing, drilling, etching, beating, raising, hammering, soldering, chasing, enameling, and coloring.
2. Suggested exercises. The making of hat pins, watch fobs, paper knives, card trays, bowls, book racks, spoons, ladles, etc.

Correlated and Supplementary Work.

1. Metallurgy of brass, copper and silver.
2. Study of silver smithing and jeweler's work, including designing and engraving.
3. Enamels and enamel work firing, pottery and china painting.

Eleventh Grade. Second Semester.

Recommended Minimum Course.

Note—This is an alternate course to be substituted for the one outlined above, if in the judgment of the instructor it is the most desirable.

1. Principles and processes to be taught. Soldering, bending, wiring, fluxes.

2. Suggested exercises. Manufacture of piping, tin cups, cookie cutter, elbow joint, etc.

Correlated and Supplementary Work.

1. Study of metallurgy of tin and zinc.
2. The advantages and disadvantages of tinsmithing as a trade.
3. Cornice work.
4. The installation of hot-air furnaces.
5. The development of surfaces as applied to the work.

AGRICULTURE.

Agriculture as a subject for systematic study is in its infancy in the High Schools. That it will steadily grow in importance is pretty generally conceded. With the increase in density of population in the United States, Agriculture will be forced to more scientific and intensive methods. These demand more intelligent farmers and it is the duty of the schools to produce them.

The following quotation from President Roosevelt's message to the 59th Congress puts the situation clearly:

"Farming, at least in certain branches, must become a technical profession. There must be open to farmers the chance for technical and scientific training, not theoretical merely, but of the most severely practical type. The farmer represents a peculiarly high type of American citizenship, and he must have the same chance to rise and develop as other American citizens have. Moreover, it is exactly as true of the farmer as it is true of the business man and the wage earner, that the ultimate success of the nation of which he forms a part must be founded not alone on material prosperity, but upon high moral, mental and physical development. This education of the farmer—self-education by preference, but also education from the outside, as with all other men—is peculiarly necessary here in the United States, where the frontier conditions even in the newest states have now nearly vanished, where there must be a substitution of a more intensive system of cultivation for the old wasteful farm management, and where there must be a better business organization among the farmers themselves."

Any agricultural course which may be outlined is merely

suggestive. Each school must decide upon the important topics for its constituency and so outline its course.

If the suggested four year course seems to contain too many agricultural subjects then certain ones may be omitted without injury to the course. However it would seem best that in a course of its length there should be one purely agricultural subject each semester of the four years and more if the young man is to be attracted to the farm. The large number of subjects have been outlined that any community may have a choice of suitable topics for its course.

The four year course here suggested is adaptable to a community where the stock industry occupies a very important position among the farmers. If fruit raising were the more important, then stock judging in the first year should be replaced by horticulture. Each year of course should stand for some one thing, as Animals, Crops, Soils, or Management. Election may be provided for if thought best. It will be noticed that in the outlined course agricultural subjects have taken the place of history and modern languages in the usual four year scientific course.

The two year course is for the boy seventeen or eighteen who can spend but a short time in school and so needs as many of the agricultural subjects as he can study and understand with profit.

Every topic should be made as practical as possible, being tied up as closely as convenience will permit with the farm and farm life. Laboratory exercises will have to be worked out by the teacher at his own suggestion.

Suitable texts of high school grade are somewhat difficult to obtain. Bulletins from the various State Experiment Stations are found most easily adapted to many phases of high school work. When once a course has been determined upon the school should endeavor to be placed upon the mailing list of such experiment stations as will furnish it with proper bulletins. A number of publishing houses are now however beginning to meet the demand for high school texts in agriculture.

STOCK JUDGING.

Four recitations and one laboratory weekly.

TEXTS:

Types and Breeds of Farm Animals—Plumb.

Judging Live Stock—Craig.

Bulletins—Circular No. 29—Indiana Experiment Station.

Bulletins—No. 122, Horses and Mules—Illinois.

CATTLE:

Beef Breeds—

Characteristics.

History.

Score Card by Craig.

Dairy Breeds—

Characteristics.

History.

Score Card by Craig.

Swine—

Characteristics.

History.

Score Card by Craig.

Bacon Type—

Characteristics.

History.

Score Card by Craig.

SHEEP:

Mutton Type—

Characteristics.

History.

Score Card by Craig.

Fine Wool Type—

Characteristics.

History.

Score Card by Craig.

GOATS:

Angora and Milk—

Characteristics.

History.

Score Card by Craig.

HORSES:

Draft Type—

Characteristics.

History.

Score Card by Craig.

Light Type—

Characteristics.

History.

Score Card by Craig.

MULES—

Mining.

Plantation.

Lumber.

Levee.

Railroad.

BLACKSMITHING.

One Year.

Four hours a week or one afternoon or morning.

TEXT:

Iron Forging—International Correspondence Schools.

Manufacturing, Process of—

Wrought iron

Iron manufacture, uses and properties

Cast iron

Composition

Properties

Uses

Bessmer iron and steel

Building fires

Care of tools

Processes of drawing, upsetting, welding, etc.

Fagot and jump welds

Bolts, chisels, pinchers, tongs, etc., are made.

Wood Work.

Students are taught the care handling of tools, sharpening of tools, setting of saws and adjusting planes, etc.

The regular course is designed to teach the student the fundamental principles involved in practical carpentry.

Opened and closed morticesses and tenons, halving at angles, joints, splices, tool chests, tables, chairs, etc., are made using the tools.

SOILS.

One Semester.

Recitations four times a week. Laboratory once a week.

TEXTS:

The Soil—Burkett.

The Soil—King.

The Soil—Fletcher.

Laboratory Manual—Mosier.

Dry Farming—McDonald.

Origin

Physical Composition

Classes

Sedentary

Transported

Sandy soils

Sandy loam

Clay soils

Clay loam

Loam soils

Silt soils

Gravelly and stony loams

Peat and muck soils

Loess soils
Adobe soils
Salt marsh soils
Alkali soils

Value of various soils for agriculture. Movement of soil moisture.

Tillage—purpose

To prepare seed bed
To kill weeds
To conserve soil moisture
To increase water holding capacity
To aid in formation of plant food

Object and method of plowing—

History and purpose of plowing
Depth of plowing
Subsoiling
Uses of various kinds of cultivators and harrows

Dry Farming—

Dry farming methods
Campbell System
Dry farm regions
Arid lands
Semi-arid lands
Dry land crops
Dry land experiments

Fertilizers and Manures.

One Semester.

Recitations four hours each week. Laboratory once a week.

TEXTS:

First Principles of Soil Fertility—Vivian.
Fertilizers and Manures—Voorhees.
Fertilizers—Hall.

Outline of work—

Maintaining soil fertility
Methods of checking erosion
Fallowing, object and benefits
Rotation of crops and systems of rotation.
Single crop farming.
Methods of storing and using barnyard manure
Green manuring
Commercial fertilizers
Nitrogenous
Potassium
Phosphatic
Manufacture
Value
Uses

Irrigation and Drainage.

One Semester.

Average four recitations and one laboratory a week.

TEXTS:

Irrigation and Drainage—King.

Irrigation Farming—Wilcox.

Bulletins—Colorado and Utah Experiment Stations.

Outline of work—

Amount of water used by plants

Water needed for any grain crop

Object of irrigation

To supply moisture

To add fertility

Methods of applying water

Flooding

Furrow

Sub-irrigation, etc.

Methods of measuring

Acre inch

Miner's inch

Second foot

Duty of water

Character of soil

Kind of crops

Time of year

Frequency and time of irrigation

Tillage after irrigation

Methods applicable to different crops

By diverting streams

By diverting underground streams

By flood waters

By pumping (Engine, wind and stream power)

Object of drainage

Remove free water

Aeriation of soils

Increase available supply of soil moisture and plant food.

Increase warmth of soil

Remove undesirable salts

Remedy physical conditions

Methods of Drainage

By open ditches

By underground tiling

Planning drainage system

Outlet

Grade

Devices for establishing grades

Number and direction of drains

Depth of underdrainage

Kind and size of tiles

Digging ditches and laying of tiles. Cost of a drainage system.

Farm Crops—Cereals.

One Semester.

Recitation four hours a week. Laboratory once a week.

TEXTS:

The Cereals in America—Hunt.

Examining and Grading Grains—Lyon and Montgomery.

Outline of work—

Classification and choice of field crops

Possibilities of improvements

Methods of improvements

Wheat—

History

Botanical and relationships

Descriptions and characteristics

Composition—chemical

Varieties

Culture

Climate

Soil

Fertilization

Cultural methods

Plowing

Sowing

Enemies

Weeds

Fungus diseases

Insects

Methods of harvesting and threshing

Production and marketing

Grain judging

Maize, Oats, Barley, Rye, Rice, Buckwheat, Sorghums

Same outline as for wheat

Farm Crops—Forage and Fiber Crops.

One Semester.

Four recitations a week and laboratory once a week.

TEXTS:

The Forage and Fiber Crops in America—Hunt.

Outline of work—

Perennial forage grasses

Botanical relationships

Calculating mixtures

Nurse crops

Methods of seeding

Time of seeding

Depth of seeding

Rotation

Uses of fertilizers

Production and harvesting

Yield

Haymaking

Marketing

Grading of hay

Timothy—

Name

Relationship

Description

Seeds

Variations

Improvements

Adaptation

Improvements

Adaptation to soil and climate

Value

Rotation

Amount of seed to acre in seeding

Time of cutting

Advantage and disadvantages

Other grasses as meadow, foxtail, red top, Kentucky blue grass, orchard grass, meadow fescue, smooth brome grass, Bermuda grass

Also annual forage plants as millet, salt bushes, may be studied under outline for timothy

Legumes—

Perennial and annual

Botanical relationships

Common characters and

Nurse crops

Methods of seeding

Time of seeding

Depth of seeding

Rotation, their value in rotation

Fertilization

Production and harvesting

Yield

Hay making

Marketing

Grading

Alfalfa—

Name

Relationships

Description

Seeds

Improvements

Adaptation to soil and climate

Value

Rotation with cultural methods

Soils suitable for growth of alfalfa

Time of seeding

Amount of seed

Innoculation of soil

Methods of handling and caring for hay

Advantage of alfalfa

Other legumes as clover vetches, cow peas, soy beans, and field peas, may be studied in much the same manner as alfalfa.

Root Crops—

Beets (Sugar or Mangel-Wurzel), rutabagas, turnips, carrots, parsnips, kohlrabi, cabbage, rape, kale.

Outline of Study—

Name

Relationship

Types

Description

Adaptation

Cultural methods

Irrigation

Rotation

Value

Fiber Crops—

Cotton, Hemp, Flax, Jute, Ramie, Manilla Fiber, Sisal

Name

Relationship, botanical

Description, physical characteristics

Varieties

Cultural methods

Climate

Soils

Rotation

Fertilization

Harvesting

Marketing

Production

Uses

Farm Machinery.

One Semester.

Four recitations and one laboratory weekly.

TEXTS:

Farm Machinery—Davidson and Chase

Horse power

How to figure

Mechanical principles of

Materials

Strength of materials

Tillage Machinery—

Plows, harrows, weeders, cultivators

Sub-surface packer

Seeding Machinery—

- Grass seeders
- Grain seeders
- Drills and broadcasters

Harvesting Machinery—

- Development of
- Modern machinery
- Grain machinery
 - Headers, Binders, etc.

Grass—

- Mowers
- Rakes
- Reeders
- Bailers, etc.

Manure spreaders

Threshing machines

Development of

- Clover hullers, pea hullers, wheat hullers

Corn machinery

Development of

- Feed and silage cutters

Huskers

Shellers

Feed mills

Vehicles—

- Wagons
- Buggies
- Sleds

Pumping Machinery—

Suction

Force

Rotary

Centrifugal

Hydraulic ram

Storage tanks

Laboratory exercises

- Setting up and adjusting machinery.

Farm Motors.

Four recitations and one laboratory weekly.

TEXT:

Farm Motors—Davidson and Chase.

- Animal as a motor

- Horse

- Capacity

- Maximum power

Windmills—

- Development of

- Homemade windmills

- Jumbos

- Battle Ax
- Holland
- Mock Turbines
- Manufactured windmills
- Reconstructed turbines
- Power of windmills
 - Methods of erecting
 - Economic consideration of
- Steam boilers
 - Classification of
 - Locomotive
 - Marine
 - Portable
 - Stationery according to form
 - Horizontal
 - Vertical
- Adaptation of each
 - Boiler accessories
 - Feed pumps
 - Injectors
 - Steam gauge
 - Boiler capacity
 - Strength of boilers
- Fuels
 - Relative value of
 - Coal, oil, wood, straw
 - Combustion
 - Handling a boiler
 - Cleaning, firing, etc.
- Steam engines
 - Early forms
 - Present forms
- Gasoline engines
 - Types of
 - Relative use of
 - Care of
 - Advantages of gasoline engine for developing power on farm
 - Future of
- Traction engine
 - Boiler mounting
 - Under mounting
 - Frame mounting
 - Handing mounting
- Electric motors

Farm Dairying.

One Semester.

Four recitations and one laboratory weekly.

TEXTS:

Dairy Farming—Michels.

Milk and Its Products—Wing.

First Lessons in Dairying—Fan Norman.

The dairy herd

Breeding

Health and future of animals

The selection of

Building up a dairy herd

Principles involved

Breeds of dairy cattle

Jersey

Guerensey

Holstein-Fresian, etc.

Feed and care of dairy cattle

Principles of feeding

Calculation of ration

Silos

Silo construction and Silage

Methods of keeping records of individual cows

Milking

Herd management

Rearing the dairy calf

Construction of dairy barn and milk house

Diseases and ailments of dairy cattle

Milk and its products

Milk

Composition

Chemical, physical, properties

The Babcock test

Principle

Apparatus

Chemicals

Bacteria and milk fermentation

Sanitary milk production

Farm butter making

Creaming, processes of cream ripening

Churning

Farm cheese making

Marketing dairy products

Care and operation of dairy machinery

Laboratory exercises

Testing milk, making butter, etc.

Diseases of Farm Animals.

One Semester.

Five recitations a week.

TEXTS:

Veterinary Studies for Agricultural Students—Reynolds.

Simple Anatomy of Horses.

Diseases

Inflammation

- Fevers
- Congestions
- Hemorrhages
- Dropsy
- Collapse
- Wounds, Various
 - Treatment
- Cause and prevention of diseases
 - Disinfection and disinfectants
 - Heredity
 - Feed and water
 - Parasitism
 - External
 - Internal
- Poisonious plants
- Ventilation of farm buildings
- Special diseases
 - Actionmycosis or Lumpy Jaw
 - Anthrax
 - Symptomatic Anthrax or Black Leg
 - Glancers and Farey
 - Foot and mouth disease
 - Texas or Tick Fever
 - Tuberculosis
 - Hog Cholera
 - Choke
 - Hoover or Bloat
 - Lameness
 - Soundness
 - Lymphangitis and Heaves
 - Parturient Paralysis or Milk Fever
 - Sheep scab
 - Nodule disease
 - Foot rot
 - Obstetrics
- Common medicines and remedies.

Farm Accounts.

Two afternoons a week for a year.

TEXTS:

Any good text in Elementary Bookkeeping.
Bexell's Farm Accounts.

Principles of bookkeeping

Debit and Credit

Books, as day book, ledger, etc.

Simple exercises in bookkeeping about three months

Follow Bexell's Farm Accounts in connection with courses in
Farm Management.

Horticulture.

One Year.

Five recitations and one laboratory weekly.

TEXT:

Annals of Horticulture—Bailey.

"Horticulture is the growing of flowers, fruits, vegetables and plants for ornament and fancy."

Propagation

Seed

Layering

Cutting

Grafting

Budding

Tillage

Setting and care of orchards

Fruit

Pome

Stone

Vine

Small

Harvesting

Storing

Vegetables

Construction of hot beds

Cold frames

Transplanting

Selection of seeds

Testing for germination and purity

Cultural methods of various vegetables

Beans, peas, tomatoes, cabbage, potatoes

Kitchen gardens

Market gardens

Marketing

Preparation for

Time of

Insects injurious

Kinds

Methods of eliminating

Insects beneficial

Fungus diseases

Treatment of

Landscape gardening

Lawns

Shade-trees

Ornamental shrubs

Plants for same

Farm Management.

One Year.

Three recitations weekly.

TEXT:

Farm Management—Card.

Lectures by instructor in charge.

Outline of Study—

Capital

Labor

The choice of a farm

Choosing a building site

Farm buildings

Implements and equipments

System of farming

Market problems

Advertising

Cooperation

Rotations

Records and accounts. (See Farm Accounts.)

Feeding Farm Animals.

One Semester.

Five recitations weekly.

TEXTS:

Profitable Stock Feeding—Smith.

References, Feeds and Feeding—Henry.

Outline of Study—

Computing balanced rations

Study of feeds, their composition and uses

Feed and care of horses, cattle, hogs, sheep, and poultry

Animal Breeding.

One Semester.

Five recitations weekly.

TEXT:

Animal Breeding—Shaw.

Outline of Study—

Care of breeding animals

Laws of breeding

Mendel's Law

Law of Atavism, etc.

Relative influence of parents

Selection

Cross breeding

Grading

Form new breeds

Reading and writing pedigrees

Poultry.
One Semester.

Two recitations weekly.

TEXTS:

Progressive Poultry—Bingham.
Station Bulletins.

Outline of Study—

Standard varieties of chickens
Care and feeding of chickens, ducks, turkeys and geese
Marketing and Market problems
Planning of buildings
Incubators
Brooders

Optional Subject.

This topic is to be studied at home for a specified time under the direction of the teacher and shall count for at least one semester's work in any regular subject. A full record must be kept of the work done including time, labor, cost and profit or loss.

Suggested topics—

- (1) Planting and raising of a crop of oats or wheat, etc.
 - Selection and land picking of seeds
 - Germination tests
 - Preparation of land
 - Seeding
 - Irrigation and culture
 - Harvesting
 - Threshing
 - Marketing
- (2) Record of a dairy cow for a year.
 - Care
 - Feed
 - Cost of feed
 - Kind of feed
 - Balanced ration
 - Daily milk record
 - Profit or loss

Chickens
Horses
Sheep
Gardening

Each topic is to be similarly outlined as preceeding ones.

MECHANICAL DRAWING.

Four periods a week during the year. Two periods in succession necessary.

Materials—Good mechanical drawing paper which may bear a good deal of erasing. Post's Carona No. 7 is a good paper for the purpose.

A good India ink.

Drawing instruments. Least possible number for good work. Drawing board.

T. square.

Triangle 60' 30'.

One protractor.

Compasses—pencil and pen.

Ruling pen.

Spring bow pencil and pen.

An irregular curve or scroll.

Pencil 6h and 4h.

Tillott pen No. 404 for lettering.

Thumb tacks.

Object—That the farmer boy may be able to read simple plans; also to draw simple plans which may be read by a mechanic.

Plate I.—Free hand lettering.

Plates II.-V.—Geometrical Problems (To be done with instruments other than T square and triangle. **Six problems to a plate.**)

1. To draw a perpendicular to a line from a point on the line.
2. To draw a perpendicular to a line from a point outside the line.
3. To draw a perpendicular to a line from a point at the end of a line.
4. To bisect a line.
5. To bisect an arc.
6. To construct at a given point in a line, an angle equal to a given angle.
- 7-8. To draw through a given point, a line parallel to a given line (two methods).
9. To bisect a given angle.
10. To construct a triangle when one side and the included angle are given.
11. To construct a triangle when two sides and the two including angles are given.
12. To construct a triangle when two sides and the two including angles are given.

13. To pass a circumference through three points not in a straight line.
14. To draw a tangent to an arc at a given point on the arc.
15. To draw a tangent to an arc from a given point outside the arc.
16. To draw an arc of a given radius tangent to two intersecting lines.
17. To inscribe a regular hexagon in a given circle.
18. To inscribe a regular triangle in a given circle.
19. To circumscribe a regular triangle about a given circle.
20. To inscribe a circle in a given triangle.
21. To circumscribe a circle about a given triangle.
22. To divide a given line into any number of equal parts.
23. To construct a regular pentagon upon a given line as a side.
24. To copy a curve by points in equal enlarged or diminished size.

Projections two problems on a plate.

Plates VI-X.

25. Draw three views of a right rectangular prism, $1\frac{3}{8} \times 3\frac{3}{4}$ in. having its faces parallel in pairs to the planes of projection, the largest faces being parallel to V and the greater dimension of those faces vertical.
26. Three views of a horizontal rectangular plane $1\frac{1}{2}$ in., the plane to be the top surface of the solid shown in Prob. 25 and similarly situated.
27. Three views of a vertical regular hexagonal plane of $2\frac{1}{4}$ in. line diameter, this diameter to be parallel to H.
28. Three views of a line $1\frac{3}{4}$ in. long parallel to H. and S. V.
(Vertical plane H.)
(H. Horizontal plane.)
(H. S. side vertical plane.)
29. Draw three views of a right circular prism altitude parallel to V. having the diameter of the prism 2 in. and the altitude $3\frac{3}{4}$ in.
30. Draw a right rectangular prism $1\frac{1}{2}$ in. by $2\frac{1}{4}$ in. having the largest faces parallel to V and its longest edges inclined up to the left at 30 degrees from vertical.
31. Three views of a rectangular pyramid 2 in. by $1\frac{1}{2}$ in. altitude 4 in. placed so that its altitude is perpendicular to H. and its greatest base line is parallel to V.
32. Two views, top and front and a cross section of a chimney.
(Use 1 in scale.) Height 4 ft.
Base 2 ft. by $1\frac{1}{8}$ ft. Flue $1\frac{3}{8}$ ft. by $\frac{1}{2}$ ft.
Trimming $\frac{5}{8}$ ft., wide 3-16 ft., projection 3 ft. from base.
Indicating carefully all dimensions.
33. A hollow cylinder 4 in. high having a base and top 2 in. in diameter and $\frac{1}{2}$ in. thick projecting $\frac{1}{4}$ in. over the main of the cylinder.
Diameter of hollow space 1 in. Show two views and cross section. Use center lines but no axis of projection. Indicate all dimension lines.
34. Three views of a square prism 4 in. high, 2 in. square which is paneled $\frac{1}{4}$ in. deep, on each face $\frac{1}{2}$ in. from either side and

end, and so placed that one side of the base forms an angle of 30 degrees with the horizontal axis of projection.

Plate XI. Working drawings.

- (1) Table 3 ft. 4 in. projecting 3 in. (top) 2 ft. 5 in. by 2½ in. by 2½ in. (legs).
Frame to be lumber 4 in. wide. Legs to be put on with Tenon joints 1¼ by ⅝ in. set in ¼ in. from each leg. (Indicate scale.)
- (2) Tool box.
2 ft. long, 6½ in. deep, 1¼ ft. wide, having a central partition extending above and containing a hole for handle.
Partition 13½ in. high with hole ¾ in. from top and 1¼ in deep, 6 in. long. Show all dimensions also give scale.

Plate XII.

Draw school ground plan, placing main buildings, driveway, outbuildings, walks and shrubery in their proper places.

Plate XIII.

Indicate cardinal points and scale.

Lay out the plan of a farm (your own if you choose), show location of buildings, ditches, streams, and divisions of land into fields for pasture, farming hay, etc. Indicate scale used.

Plate XIV.

Barn or shop plans. Floor plans locating all chutes, stalls, boxes, etc. Make an elevation of this plan, also detail of roof construction.

Make a blue print of one of these plates of working drawings.

Suggested Four-Year Course.

First Year.

FIRST SEMESTER:

English
Algebra
Physiography
Stock Judging
Blacksmithing

SECOND SEMESTER:

English
Algebra
Physiography
Stock Judging
Blacksmithing

Second Year.

FIRST SEMESTER:

English
Geometry Plane
Biology
Farm Crops—Cereals
Carpentry

SECOND SEMESTER:

English
Geometry Plane
Biology
Farm Crop Forage and
Fiber Crops
Carpentry

Third Year.

FIRST SEMESTER:

English
Chemistry
Algebra
Soils

SECOND SEMESTER:

English
Chemistry
Irrigation and Draining
Mechanical Drawing

Fourth Year.

FIRST SEMESTER:

English
Physics
Farm Accounts
Farm Management
Farm Machines
Farm Dairying

SECOND SEMESTER:

English
Physics
Farm Accounts
Farm Management
Feeding Farm Animals
Farm Motors

Suggested Two-Year Course.

First Year.

FIRST SEMESTER:

English
Stock Judging
Farm Crops—Cereals

Diseases of Farm Animals
Blacksmithing

SECOND SEMESTER:

English
Stock Judging
Farm Crops Forage and
Fiber Crops
Irrigation and Drainage
Blacksmithing

Second Year.

FIRST SEMESTER:

English
Soils
Farm Accounts
Farm Management
Farm Dairying
Carpentry

SECOND SEMESTER:

English
Manures and Fertilizers
Farm Accounts
Farm Management
Feeding Farm Animals
Carpentry

TEXTS.

Plumb—Types and Breeds of Farm Animals.....Ginn & Co.
King—The Soil King, Madison, Wis.
Burkett—The Soil O. J. Company
Fletcher—The Soil Double Day Page & Co.
W. P. Brooks—Soils The Home Correspondence School
Mosier—Laboratory Manual Mosier, Urban, Ill.
McDonald—Dry Farming The Century Co.
Widtsoe—Dry Farming MacMillan Co.
Vivian—Soil Fertility O. J. Company
King—Irrigation and Drainage King, Madison, Wis.
Wilcox—Irrigation Farming O. J. Company
Hunt—The Cereals in America O. J. Company
Lyon and Montgomery—Examining and Grading Grains.....Ginn & Co.
Hunt—The Forage and Fiber Crops in America.....O. J. Company
Davidson and Chase—Farm Machinery O. J. Company
Davidson and Chase—Farm Motors O. J. Company
Michels—Dairy Farming John Michels, West Raleigh, N. C.
Wing—Milk and Its Products Macmillan Co.
Van Norman—First Lessons in Dairying O. J. Company
Reynolds—Veterinary Studies for Agricultural Students..Webb Pub. Co.
Brooks—Animal Husbandry The Home Correspondence School
Bexell—Bexell's Farm Accounts.....Home Correspondence School

Bailey—Annals of Horticulture	O. J. Company
Card—Farm Management	Double Day Page & Co.
Shaw—Animal Breeding	O. J. Company
Marshall—Animal Breeding	O. J. Company
C. M. Arkman—Manures and Manuring	
Brooks—Manures and Fertilizers.....	The Home Correspondence School
Brigham—Progressive Poultry.....	The Torch Press, Des Moines, Ia.
Smith—Profitable Stock Feeding.....	Smith & Co., Lincoln, Neb.

DOMESTIC SCIENCE.

It was not deemed wise to give a course in too great detail but to indicate the topics that would be covered in almost any course, leaving the variations to be worked out locally.

There are many arguments in favor of putting sewing in the first and third years and cooking in the second and fourth. Such an arrangement is recommended.

First Year.

I. PRACTICAL WORK—

(a) Drafting.

1. Hand sewing, fundamental stitches.

Machine sewing.

2. Combination of hand and machine sewing in designing and making.

(1) Complete set of white undergarments.

(2) Shirtwaist suit of wool or cotton.

(3) Apron and sleeve protectors.

(4) A wash dress.

(5) Mending.

(6) Kimona.

II. THEORETICAL WORK—

(a) History, use and care of sewing machine.

(b) Cotton, wool and flax; their growth, cultivation, use; manufacture of cotton and wool thread and fabrics.

(c) Emery needles.

Second Year.

KITCHEN COOKING—

1. Equipment and care of same. (Especially the sink, range and refrigerator.)

Directions for washing dishes and dish towels.

2. Function of Foods.

Classification of Nutrients.

Inorganic Foods.

I. WATER—

3. Kinds and uses of water.

Boiling and simmering points of water.

Effects of adding substances, as salt, sugar, etc.

Organic Foods.

II. CARBOHYDRATES—

4. **Fruits and Vegetables:**

Classification, Composition, etc.

Prepare Baked or Stewed Fruit.

Prepare Baked or Boiled Potatoes.

5. **Cereals:**

Source and Preparation.

Prepare Rice and one other Cereal.

Discuss the Fireless Cooker.

6. **Cereal Products:**

Prepare Toast and White Sauce.

Discuss Corn Starch, Tapioca, Macaroni, etc.

7. **Sugar:**

Different kinds of sugar, their source and preparation.

Cook Syrup, noting all stages from thread to caramel sugar.

Prepare two or more kinds of candy.

III. PROTEINS—

8. **Milk:**

Prepare Junket with Caramel Sauce.

Discuss Cheese and other milk products.

9. **Eggs:**

Discuss effects of different temperatures.

Discuss boiled, poached, eggs, etc.

Prepare custard, boiled or baked.

10. **Meat and Fish:**

Different cuts of meats.

Prepare broiled or roast meat.

Discuss ways of cooking tough meats.

Discuss, Fish and gelatin.

11. **Batters:**

Discuss leavening agents.

Study of pour and drop batters.

Prepare popovers and muffins.

12. **Doughs:**

Prepare Bread and Rolls.

Discuss Yeast.

Third Year.

I. PRACTICAL WORK—

(a) Wool suit or thin according to season.

(b) Altering old material.

(c) Designing or stenciling of white gown for evening wear, or graduation; or

(d) Household linen.

(e) Hand-made waist or baby dress.

(f) Embroidery.

(g) Millinery.

(h) Household furnishings.

(i) Drawing of plans of medium sized house.

- (j) Making of note book, showing actual samples of wood work, papers, etc., for each room.

II. THEORETICAL WORK—

- (a) Study of wool and silk.
(b) History and art of designing.
(c) History of costume.

Fourth Year.

First Semester.

General Subjects:

- Food and Its Preparation.
Bacteriology.
Serving.
Economics.

A. FOOD AND ITS PREPARATION—

- I. Canning, preserving and jelly making.
II. Review and elaboration of first year's work.
III. Chafing Dish cookery.
IV. Serving of simple meals at limited cost.

B. BACTERIOLOGY—

- I. Yeasts.
II. Molds.
III. Bacteria.
IV. Milk supply.

C. SERVING.

- I. Care of dining room and table linen.
II. Serving, with and without a maid.

D. ECONOMICS—

- I. Marketing.
II. Accounts.
III. Economic problems of the home.
IV. Division of income.
V. Household accounts.
VI. Saving time, strength and material in conducting household operations.
VII. Relation of food to work.

Second Semester.

General Subjects:

- Food and Its Preparation.
Home Nursing.
Sanitation.
Laundry.

A. FOOD AND ITS PREPARATION—

- I. Fireless cookery.
Cooking of meats, vegetables and frozen mixtures.
II. Infant diet.
Cooking of modified milk, barley water, whay, etc.
III. Invalid diet.
Preparation and serving of meals to suit special conditions.

IV. Fancy cooking.

Bread, cakes, salads, entrees, meats, vegetables, desserts, sauces, and garnishings.

V. Preparation and serving of an elaborate dinner.

B. HOME NURSING—

I. Care of sick room.

II. Care of invalid.

III. Making of beds.

IV. Symptoms and treatment of common diseases.

V. Emergencies.

C. SANITATION—

I. Public Hygiene.

1. Water and milk supply.

2. Laws of Board of Health.

II. Personal Hygiene.

1. Plumbing.

2. Ventilation and heating.

D. LAUNDRY WORK.

